**The 2018 SWEEP application information was extracted from the application system as submitted, therefore, the California Department of Food and Agriculture cannot guarantee accuracy of the information.

Applicant Organization	Project Description	Funds Requested	County
Jost Farms, Inc.	This proposed project includes installing a dual line drip irrigation system on 76 acres of stone fruit that is currently flood irrigated. The existing inefficient 50HP pump will be replaced with a highly efficient 75hp pump with a Variable Frequency Drive. A flow meter and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Tulare
David te Velde Dairy	The proposed project involves making efficiency upgrades on 2 ranches. Soil moisture sensors, flow meter monitoring, and pump and valve automation are proposed on 156 acres of grapes and 800 acres of tomatoes. The existing flow meters and valves will be retrofit so they can be remotely monitored and controlled. The proposed monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$96,821.90	Tulare and Kings
Wild Oak Farms, Inc.	The proposed project involves making efficiency upgrades on 3 ranches. Soil moisture monitoring, flow meter monitoring, and pump and valve automation are proposed on 154 acres of walnuts, 38 acres of citrus, and 148 acres of grapes. A Variable Frequency Drive is also proposed on the grape vineyard. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Kings
M. M. Jackson Farms, Inc.	The proposed project includes installing a dual line drip irrigation system on 35 acres of stone fruit and a microsprinkler irrigation system on 39 acres of walnuts, both of which are currently flood irrigated. An inefficient pump will be replaced, and both systems will have Variable Frequency Drives. Flow meters and moisture monitors will be installed on both ranches that will produce real time flow rate and soil moisture data. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Kings

Applicant Organization	Project Description	Funds Requested	County
Wiebe Farms Inc.	This project includes installing dual line drip irrigation systems on two ranches totaling 53 acres of stone fruit that are currently flood irrigated. The existing inefficient pumps will be replaced with new high efficiency ones with Variable Frequency Drives. Flow meters and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Tulare
Nick Visser	This proposed project includes installing a dual line drip irrigation system on 37 acres of stone fruit that is currently flood irrigated. Two electric pumps, one 20hp and one 15hp, will be replaced by a new 50hp pump with a Variable Frequency Drive. A flow meter and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$64,377.61	Tulare
Casey Jones	This proposed project includes installing a dual line drip irrigation system on 148 acres of stone fruit that is currently flood irrigated. An inefficient 25hp pump will be replaced with a new, highly efficient,100hp pump with a Variable Frequency Drive. A flow meter and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Fresno
Brad Jones	This proposed project includes installing a dual line drip irrigation system on 135 acres of stone fruit that is currently flood irrigated. Two pumps, one 30hp and the other 7.5hp will be replaced by highly efficient 100hp pump with a Variable Frequency Drive. A 25hp with a V.F.D. will remain in use and be tied into the pressurized system. Flow meters and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Tulare

Applicant Organization	Project Description	Funds Requested	County
Elliott Rossotti	This proposed project includes installing a dual line drip irrigation system on 30 acres of stone fruit that is currently flood irrigated. The system will be supplied by the existing 60hp electric pump with a variable frequency drive. A flow meter and an in-field moisture monitor will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$59,936.97	Tulare
J. Wayne Brandt	The proposed project includes installing a dual line drip irrigation system on 2 stone fruit ranches that are currently flood irrigated totaling 64 acres. One inefficient pump will be replaced, and flow meters will be installed at both ranches. Moisture monitors will be installed in the field that will produce real time data to properly time and ensure the efficiency of irrigations.	$100,000.00	Fresno
Jack W. Brandt	This project includes installing a dual line drip irrigation system on 33 acres of stone fruit that is currently flood irrigated. The existing inefficient pump will be abandoned. The system will be tied into a highly efficient pump on an adjacent ranch with a flow meter and Variable Frequency Drive. Moisture monitors will be installed in the field that will produce real time data to properly time and ensure the efficiency of irrigations.	$74,671.98	Fresno
Mountain View Fruit Sales, INC.	This proposed project includes installing a dual line drip irrigation system on 73 acres of stone fruit that is currently flood irrigated. The existing inefficient pump and 125hp diesel motor will be replaced with a highly efficient 50hp pump with a Variable Frequency Drive. A flow meter and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	Tulare

Applicant Organization	Project Description	Funds Requested	County
R&A Atwal Farms, LLC	This project proposes updating all existing sprinkler heads to more efficient ones, and installing moisture sensors, and a flow meter on the main irrigation pump.	$30,123.38	Yolo
River Garden Farms Co	This project proposes changing the controls on the 50 and 75 horse power Town site pumps to VFD's and then integrating those VFD's into the River Garden SCADA system. The biggest pump (100 hp) would be upgraded. The next component to this proposal is to enhance the telemetry and the information being gathered at the production well sites 104 and 104-09. Each site will have a ditch level monitor installed in the adjacent irrigation canal. The monitors will be tied into the SCADA system for remote real time data collection and in season monitoring.	$99,918.00	Yolo
Riverwest Farming LP	This project proposes to convert flood to drip irrigation on 77 acres of stone fruit and 22 acres of citrus. The project includes 4 electric pumps: 15hp, 20hp, 25hp, and 40hp and installs a variable frequency drive (VFD). Soil moisture sensors will be installed.	$100,000.00	Fresno
Phillip Tubbs	This project proposes to: 1) install a 25.2 kw Solar Photovoltaic (PV) system to supply electricity for the 30 hp well pump. 2) Install a Variable Frequency Drive (VFD) to the 30hp well pump/motor that will improve energy efficiency usage. 3) Install Field moisture monitoring system that includes, electronic flow meter and pressure sensor, four soil moisture sensors and a weather station. 4) Install an Acid Injection variable rate system to reduce pH of water. In addition, the Irrigation training course will be taken.	$70,906.07	San Luis Obispo
Running Luck Ranch LLC.	This proposed project will improve pumping efficiency by adding a VFD, changing the irrigation system from micro sprinklers to drip irrigation and adding two data loggers and 4 moisture monitor sensors to better track water usage.	$94,222.51	Fresno
B&R TeVelde	This project allows for the conversion of 48 acres of rotating wheat and corn from flood irrigation to underground drip irrigation by installing a filter station and underground drip irrigation system. An existing 200 hp pump and flow meter will be used to apply and track water runs, and a soil moisture monitoring unit will be installed to track the movement and plant uptake of irrigation water to enhance irrigation water use efficiency.	$100,000.00	Tulare

Applicant Organization	Project Description	Funds Requested	County
Lockewood Acres	This project proposes pump retrofitting, improved irrigation scheduling and new irrigation system components to reduce water use and Greenhouse Gas emissions on a 9-acre organic farm located in Solano County. A solar powered pump, storage tank and booster pump will be installed at the pumping station to reduce annual electric consumption. A weather station and soil moisture probes will be installed to inform irrigation scheduling.	$46,604.00	Solano
Hedgerow Farms	This project proposes to install VFD with flow meter to well in F4 to appropriately measure and adjust flow rates for the size of the block to irrigate. Also, soil moisture sensors will be installed in 9 locations. Leaky above ground main line and unlined ditches will be replaced with buried main line with riser valves. In addition, 4.77 acres of subsurface drip irrigation will be installed.	$81,703.64	Yolo
Scheid Vineyards	This proposed project will monitor the entire irrigation decision making process to improve efficiencies at each step. Weather stations will allow vineyard managers to understand weather at a ranch level rather than relying on distant stations that may not represent local conditions. Soil moisture probes will be installed. Crop modeling software will be used to providing context to these weather and irrigation events at a seasonal perspective. Irrigation infrastructure mapping will provide an accurate representation of the system that is delivering water and helps to identify inefficiencies.	$64,265.00	Monterey
Serventi Ranch	This proposed project will convert a gas-powered pump to electrical and install a related drip field, and VFD as part of a long-term conversion from Sprinklers to Drip Irrigation in an apple orchard. After completion of this project, approx. 8 acres will be irrigated using sprinklers, and 7 acres on drip, and the remainder will be dry-farmed.	$12,832.00	Santa Cruz
Rivercrest	This project will be taking roughly 50 acres of flood irrigated alfalfa and converting it into a micro sprinkler irrigated walnut orchard. Water efficiency will be optimized using Hortau's irrigation monitoring platform, consisting of soil moisture probes, a weather station, and flow meter monitoring.	$100,000.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Capay Hills Orchard	This proposed project includes installation of Soil Moisture probes in 2 locations, 3 depths to assist in monitoring soil moisture and determining irrigation needs on 13.0 planted acres of organic almonds. Also, water flow meters will be installed on well. There will be no changes to existing 6-month-old pump. Also, additional solar panels will be added to the existing system.	$9,921.85	Yolo
Bastoni Vineyards	The proposed project would remove an older 2-hp jet pump and replace with a high efficiency 2-hp irrigation pump to reduce energy usage of said pump on vineyard 2. The project would also replace two low efficiency 2-hp irrigation pumps with high efficiency 2-hp pumps on vineyard 1 and 3. The project would install a 8.5-kW solar system in Vineyard 2. In addition, this project would install three base weather stations and two remote weather stations to monitor the need for water irrigation timing in three vineyards. Weather stations will also help determine when to turn on fan for electric cold air drain system during frost season. The weather stations would also require installation of three wifi repeaters, one on each parcel. Lastly, the project would install permanent soil moisture sensors with each weather station to offer precision water control for total amount of water used, as well as offer a portable moisture prob for remote locations. These will be used to control the rate of watering and frequency of water application, with likely reductions in water use as well as power for moving the water.	$45,263.93	Sonoma
Vino Farms, LLC	The objectives of the project are to improve irrigation efficiency through system automation, to utilize technology to refine irrigation decision making and to increase labor productivity. The current components include electric pump and filter stations, digital flow meters, wired electric valves and solar panels. The proposed project would include scheduling software and an online interface, seven 48" soil probe locations, remote pump/valve control, system health alerts, pressure monitoring and irrigation/well extraction reports. This project will be implemented on a total of 410.1 acres of wine grapes that are located on three different ranches called: Ranch 1, Ranch 5, and LF3.	$22,000.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Kachuck Enterprises, Inc.	The proposed project is to design, construct and operate a 250kWdc (nominal) solar electric power system for water pumping, to replace energy that is currently purchased from the local utility. The technology is solar electric (photovoltaic). The project location is adjacent to Via del Venado in Double Canyon in Valley Center, San Diego County.	$100,000.00	San Diego
Vinedos de Cuesta Dulce Corporation	The purpose of this project is to install a 23.4 kW DC solar PV system to power the existing 10hp electric submersible and a 5hp electric booster pumps, both currently operated from a propane generator. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter, well level and tank level sensors will also be implemented on the 20 acres of wine grapes served by this pump to increase water savings. This project site is located in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$95,803.29	San Luis Obispo
Cuyama Homegrown	This project proposes to replace the existing 1 1/4" galvanized pipe with submersible pump of 1.5 Hp by a 2" PVC pipe with submersible pump of 2 Hp and be lowered at 400 ft below ground level. The 40-year-old electrical cable # 10/ 3 wires no ground wire, is not to code and is to be renewed up to code. The new system includes a filter system and flow meter. The existing drip system will be upgraded on the vegetable field of 0.2 acre. The conversion to micro-irrigation with filters and low-pressure, with drip systems per crop row or per individual plants; the installation of moisture meter sensors with electronic data output linked to an irrigation controller activating the on-field valves, will allow an effective adjustment of the water use. The water use will be monitored with a flow meter. Logbooks will be kept. The domestic well is situated in the critically over drafted Cuyama Water Basin.	$12,308.03	Santa Barbara

Applicant Organization	Project Description	Funds Requested	County
French Creek Ranch	The project consists of five major components that will reduce energy use, water consumption and Greenhouse Gas Production (GHG) at French Creek Ranch: (1) The pre-project pump is a 10-horse submersible pump with 54% efficiency. Post project will be a 10-horse submersible pump with 78.5% efficiency. Pacific Power and Light currently services the pump with electricity, which will be converted to solar powered electricity. (2) The irrigation delivery will be converted from a traveler big gun sprinkler to a center pivot. (3) A conversion of 2585 ft. existing 3 & 1.9-inch mainline water delivery pipe to 1400 ft. of 4-inch pipe will further reduce friction losses. (4) Installation of soil moisture sensors as well as utilizing CIMIS to further enhance irrigation scheduling. (5) To improve efficiency of water application, this project will also install, in-line flow gaging to measure water use, as required by AB 88, and to aid in water application calculations. The proposed project also includes attending irrigation management training, mulch application, and cost share and in-kind match provided by the landowner totaling $26,286.50 and consisting of 24% percent of project costs.	$84,727.89	Siskiyou
Parks Land and Cattle Company	This project purpose is to improve the irrigation efficiency on two adjoining avocado ranches. El Rancho 1 is 41.8 acres and El Rancho 2 is 56.3 acres. The goal of this project is to optimize overall water usage and thus reduce pumping costs and greenhouse gases. Pressure compensating sprinklers will replace current micro-sprinklers to improve distribution uniformity and improve overall irrigation effectiveness. Real-time remote moisture and soil temperature sensors will be installed in each irrigation block to help manage timing and duration of irrigation and assure fertilization timing is optimal. A weather station will be installed to provide site specific evapotranspiration data. VFDs will be installed on 2 existing wells (5HP and 7.5HP) to reduce power usage. A new flow meter will be installed on the irrigation reservoir pump to measure and track usage. Two sulfuric acid systems will be added to improve water infiltration and reduce runoff.	$85,752.00	Santa Barbara

Applicant Organization	Project Description	Funds Requested	County
Bennett AgComm, LLC	The proposed project includes a farm split by a county road, with a pump on each side, tied together with a common mainline. This project is only going to include the North Side of Picard Road. The Farm field is 120 ac of Alfalfa and Alfalfa/Grass irrigated by Center Pivot and 15 acres of grain which is flood irrigated corners. The pump for this site is 125 Hp submersible pump with a VFD controller. This pump is controlled by a pressure transducer to operate at 30 psi to pump water to a center pivot with LESA sprinkler application package. There are currently moisture sensors and a magnetic flow meter installed and this proposal would include installation of a weather station to enhance Irrigation Water Management. This pump also supplies irrigation water to the adjoining field as well as maintain the operating pressure in that center pivot. The proposal also includes the installation of 85.4 KW of solar panels to reduce the GHG emissions of this pumping plant.	$99,893.64	Siskiyou
Lindstrom Vineyard	This project is for 52 acres of wine grapes in a critically over-drafted water basin. This project will include several improvements to maximize water efficiency and reduce greenhouse gases. Among the improvements are a 38.5 kw solar array supplying electricity to a 50hp submersible pump, installation of 4 soil moisture meters and a weather station connected to a monitoring system to best determine irrigation cycle, upgrading existing flow meter to a digital flow meter connected to the monitoring system, and electric solenoid valves installed in the irrigation system connected to a irrigation controller to pinpoint best time-of-day (or night) to irrigate without chance of leaving the system on too long. Also, the irrigation training course will be taken.	$50,989.82	San Luis Obispo
Pellegrini Ranches	This multifaceted project will improve irrigation practices at Pellegrini Ranches through a combination of increased systems efficiency, alternative methods of frost protection, improved environmental awareness, water-use monitoring, increased ability and frequency to monitor and manage water stress on both a per plant and per block basis. Having recently added a VFD pump, this project's addition of flow meters, will give the ability to both save energy and water as well as to accurately record flow. Pellegrini Ranches will be able to respond to measured water use and plant stress with more efficient delivery of reduced volumes as well as less frequent irrigation throughout the growing season.	$100,000.00	Sonoma

Applicant Organization	Project Description	Funds Requested	County
Bennett Farming, LLC	This proposed project would include the replacement of the 50 Hp motor to a new high efficiency 50 Hp electric motor along with a VFD controller to manage the different pressure levels required from the pumping plant due to pivot vs flood systems. The pumping plant serves only the pivot system or the flood system at any given time, never both at the same time. This project would also address the issue of IWM with the installation of a flow meter, weather station, and telemetry pivot products to allow for the flow of control commands and management data between the central office location and the farm. The final proposed step would include the installation of a 44KW renewable energy source of solar panels to the farm to reduce the greenhouse gas emissions.	$80,279.60	Siskiyou
4G's Brawley Ranch, LLC (Gargiulo Farms)	This project proposes to replace a 30-yr old diesel-powered pump with a highly efficient, low-pressure, electric powered, micro drip irrigation system. Drip flow meters, soil moisture sensors, and Tule (ET) Sensors will be used for effective irrigation management. Initially, the new highly efficient micro drip irrigation system will be designed for 70 acres of onions. This project proposes to build the new drip irrigation station centrally located within the farm. The conversion to drip irrigation will reduce overall applied water, increase nutrient uptake, decrease fertilizer loss, and potentially increase overall yields.	$100,000.00	Imperial
James and Amanda Lefor	The project proposes to convert existing flood irrigated pasture to micro-sprinkler irrigated almonds. The project includes installing real time remote soil moisture sensing equipment to help irrigate more efficiently. The sensors installed will read soil moisture every 4" down to 48" (120 cm. The station will be equipped with a pressure sensor attached directly to the drip line to monitor pressure and calculate irrigation run time. The sensors will be used to determine the depth of irrigation and the most efficient run time to achieve proper depth of irrigation. The project also includes installation of a weather station equipped with weather sensors will be used to calculate reference evapotranspiration (ETo)/crop evapotranspiration (ETc). Crop water use, observed on the soil moisture sensors, will be balanced by calculated ETo/ETc values to prevent unnecessary irrigation events. Flow meter will be added. Finally, a Tier 4 Final 155 horsepower diesel pump engine will replace the current Tier 0 173 horsepower diesel pump.	$62,943.24	Tehama

Applicant Organization	Project Description	Funds Requested	County
Manuel C. Leal & Son Dairy	This project proposes replacing the current 130 hp natural gas well engine with a 100 HP electric motor powered by a 100 HP rated VFD panel. Also, design and installation of a lined irrigation pond will allow to utilize surface water from Tulare Irrigation District to irrigate the orchards via drip irrigation. Water would be pumped from the reservoir by a 40 HP booster pump powered by a compatible VFD panel. Currently, flood irrigation with surface water is being used.	$99,973.91	Tulare
C & T Murphy Partners LLC	The proposed project is to install a new 200hp VFD booster pump to receive and use surface water from the Stockton East Water District, instead of groundwater from a critically over drafted sub-basin. The project involves the installation of the following components: (1) a grower-owned pump station with a Saddle Meter flow meter on a canal used as part of the District's conveyance system; (2) integrated water management with a Sentek remote soil moisture probe; and (3) the pipe, couplings, and valves needed to connect the new pump station to existing irrigation system. The proposed changes to the existing on-farm irrigation system will save power because the surface water is being pumped from the river, as opposed from underground, and will only need minor boosting of pressure from the conveyance canal to the farm. The proposed changes will result in water savings by providing the farm with additional tools needed to better manage the total volume of water that is applied to the existing orchard. The reduced pumping and use of a high-efficiency pump will reduce greenhouse gases.	$99,735.11	San Joaquin
Dustin Timothy Farming	This project proposes: 1) conversion of 86 acres of flood irrigated alfalfa to drip irrigated almonds (Fields 66 & 67). Along with the crop and irrigation system conversion, the groundwater well source is being changed from a well with a less efficient pump #68 (75 HP) to a pump #63 (125 HP) with greater efficiency that has an installed variable frequency drive (VFD) already in working order. 2) Installation of a variable frequency drive on pump #13 (60 HP) which will serve 144 acres of row crops (Fields 10-13). This pump occasionally serves fields 14-17 which represents an additional 98 acres of row crops and 39 acres of almonds.	$98,870.90	Solano

Applicant Organization	Project Description	Funds Requested	County
Kandarian Sons, LLC	This project proposes replanting 40ac and 20ac of flood irrigated vineyards with a 40ac high yielding, drip irrigated vineyard, and a 20ac citrus orchard on micro-irrigation. Level "0" IWM practices will be upgraded to Level "3". Existing 30hp and 25hp pumps will not need upgrading. Groundwater pumping will be reduced. Jobs and revenue will be additional benefits to a disadvantaged community.	$99,999.62	Fresno
Randall Shoffner	This project will convert flood irrigation to a drip irrigation system, a flow meter and a sand media filter station will be installed on the electric 15 hp pumping station. In field soil moisture monitors will be installed using solar charging and will deliver real time data. The recipient will use multiple irrigation water management (IWM) practices on the 35 acres of wine grapes going from flood irrigation to drip system. Three Soil Moisture Meters and a flow meter are part of the IWM that are being added. 9 acres of flooded oranges are being converted to wine grapes totaling 35 acres for this project.	$45,739.98	Fresno
Nelson Ranch	The project includes installation of a 23-kW grid-connected solar array, soil monitoring sensors, a weather station with Evapotranspiration (ET) measuring capabilities and a flow meter. The soil moisture sensors will be installed in each irrigation block at 6" and 18" respectively. Soil moisture sensors will be used to determine the optimal interval between irrigation, duration of irrigation, and depth of water use by roots. In addition, an Et measuring device will be added in order to provide another accurate point of reference when making irrigation decisions. A flow meter located at the outlet of the storage tank will also improve water use efficiency.	$71,325.85	San Diego
Richard Lauchland	The purpose of this project is to install a 100hp Variable Frequency Drive (VFD), and a 20.4 kW solar PV system, to power the existing 100hp electric submersible pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the existing digital flow meter and well level sensor will also be implemented on the 65 acres of wine grapes served by this pump to increase water savings. This project site is located in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$99,583.32	San Luis Obispo

Applicant Organization	Project Description	Funds Requested	County
La Mesa Vineyards LLC	This project proposes installation of a 14.5 kW DC solar photovoltaic (PV) system to power agricultural needs including two submersible pumps serving 11 acres of wine grapes. The new solar system will reduce greenhouse gas (GHG) emissions. Flow meters will be installed and wifi connected to monitor the two pumps for output and improve water use efficiency by allowing the Recipient to quantify the water used per irrigation event. A variable frequency drive system and new vineyard pump will be installed for more efficient operation. A weather sensor will be installed to monitor rainfall, temperature, wind speed etc. and will be connected via Wifi and integrated into the UC IPM monitoring program. This project will help improve water use efficiency, reduce GHG emissions and allow for more precise rainfall and weather monitoring to save on irrigation.	$82,589.00	Amador
River Bend Vineyards	This proposed project includes conversion of diesel pumps to electric, addition of renewable energy (solar) for the capture of available water (storm and shallow ground), and improved irrigation efficiency in River Bend Vineyards located on the Main Stem Russian River in Mendocino County with 119 acres of wine grapes. The project proposes: (1) Increasing overall storage from 16 to 38 AF by lining a leaky pond (Pond 2). (2) Converting the largest Ag well from diesel to electric (Well 6). (3) Adding a Variable Frequency Drive to improve pumping efficiency (Well 6). (4) Installing a solar array and pumping system to help fill Pond 2 using water from storm runoff and a shallow well. (5) Installing 3 new soil moisture sensors to optimize irrigation across soil types.	$100,000.00	Mendocino
Lisa Chorbajian	Mendicino's water and energy improvements requested under this grant include a 20 HP lift pump to increase the Ranch's access to surface water and reduce dependency on ground water. The goals also include replacing antiquated flow meters and installing a 28.62 kW solar system to power 100% of the irrigation pumping. To further reduce water consumption, a real time IWM and□3 irrigation monitoring solution will be installed featuring irrigation scheduling software which will help reduce water usage and reduce GHG emissions through reduced pumping.	$99,569.23	Tulare

Applicant Organization	Project Description	Funds Requested	County
King & King Ranch	This project will install a variable frequency drive (VFD) and a new high efficiency filter on the main well pump and soil moisture sensors. The VFD and filter will decrease energy use and reduce greenhouse gas emissions. The soil moisture sensors will inform and enhance irrigation efficiency management. Improving irrigation efficiencies will decrease water use which will decrease pump time saving both water and energy. The property has two pumps, one 25 HP well pump and one 15 HP booster pump, both run on grid electric. Of the 62-acre property, 9 acres is currently under avocado cultivation, 1 acre in citrus and 32 acres transitioning from conventionally farmed seasonal row crops and will be intensively cover cropped with a radish mix for the duration of the grant before moving into avocado production. This proposal is a piece of an ambitious management goal to improve operational efficiencies, save water and energy, improve ecological functioning, and increase soil health. There are two pending Healthy Soils grant that address soil and ecological aspects of the overall vision.	$28,519.83	Ventura
Ballentine Ranches	This proposed project includes installation of Variable Frequency Drives at each of the 3 well locations. The current wells pumps are +20-yr old and were not equipped with frequency drives at the time of installation, which severely affects how the water is applied to the vineyards. Considerable water savings can be applied with the installation of VFDs.	$55,000.00	Napa
Sousa Orchards	This project will implement irrigation management and energy efficient practices on a 25-acre prune orchard. Four water management practices will be implemented to create a more efficient irrigation plan. This includes, upgrading a filtration system, installing solar panels to power the pump, installing soil moisture sensors throughout the orchard, and a Variable frequency drive (VFD) on the pump. The soil moisture meters and solar system will reduce water and energy use and decrease greenhouse gas emissions by irrigating more efficiently.	$100,000.00	Glenn

Applicant Organization	Project Description	Funds Requested	County
Loma Del Rio Vineyards, LLC.	The goal of this project will be to replace inefficient and worn out pumping equipment at a primary lift station along the water conveyance system at Loma Del Rio Vineyards, LLC. Overall pump efficiency will be improved by the retrofit and replacement of these lift pumps (40-Hp Electric Motors, vertical turbine lift pumps). Variable frequency drives will be installed on 3 of these lift pumps, as the limiting factor is cost, along with a variable frequency drive at an irrigation pumping station (Pad 60). Also. a VFD and a flowmeter will be installed. This project will include up to eight soil moisture sensor sites using Acclima time-domain reflectometry sensors to assist in more precise irrigation events throughout the growing season. Lastly, a weather station will be budgeted in, which will track rainfall, wind, solar radiation, vapor pressure deficit and most importantly, evapo-transpiration, to better assist with irrigation scheduling accuracy.	$86,262.00	Monterey
Robert Carter	This proposed project will install a flow meter to the discharge of the pump, pressure sensors before and after the pump to better monitor efficiency and will use a pressure chamber to better track when to irrigate most efficiently. Also, the filtration system will be upgraded. Moisture sensors and a temperature and humidity station will also be updated to track data more efficiently. Current system was evaluated by The Mobile Irrigation Lab and it was determined the filter sizing was incorrect. Furthermore, the recipient will complete an irrigation-training course during the project duration.	$22,923.22	Glenn
Bryan Barrios Farms	The proposed project will bring electricity to an almond orchard instead of using an engine burning diesel.	$25,000.00	Yolo
Mountain Vista Farms, LLC	The proposed project includes converting 300 HP Electric Clark B pump with softstarter to VFD on 220 acres of bearing almonds. This is one of two pumps on the ranch, the other being a VFD. Due to the size of the softstarter pump, more acreage than needed have to be irrigated to lower the discharge pressure on the pump. With the VFD, the size of the irrigation sets will be shrunk, thus reducing energy footprint, and optimizing irrigation water.	$41,744.98	Tulare

Applicant Organization	Project Description	Funds Requested	County
Bosque Verde, LLC	This project includes improving irrigation water management practices on a 106-acre block of almonds. Soil moisture stations will be added to the field to monitor irrigation efficiency through viewing the data online that is relayed through a telemetry network. Also, the current 100 Hp pump efficiency will be monitored by adding a flow meter to the discharge, and pressure sensors before and after the filters. This would be connected to a telemetry network as well. A solar array is intended to be installed to the pump to power it. Furthermore, the pump is proposed to be repaired to raise the pumping efficiency.	$100,000.00	Tehama
Jason Spaletta	The purpose of this project is to: (1) convert energy source for two pumps from electricity to solar, and (2) adding flow meter data recorders to the existing flow meters, soil moisture sensors with data transmitters and weather station with data transmitter to improve the irrigation water management. The overall goal of this project is to reduce energy and water use and use the cleanest form of energy to reduce greenhouse gas emissions. The existing 50 ac. Walnuts is irrigated with surface water using 60 hp pump and solid set sprinklers and existing 50 ac. Vineyard is irrigated with 20 hp pump and drip irrigation system.	$99,209.00	San Joaquin
Britz Inc.	This project proposes to convert flood to micro sprinkler irrigation on 198 acres of stone fruit and 75 acres of citrus. The project includes 6 electric pumps: 1-40hp, 3-50hp & 2-75hp which both install a variable frequency drive (VFD). Soil moisture sensors will also be installed. The result will be a reduction in greenhouse gas emissions and a water savings of 39%.	$100,000.00	Tulare
Quorum Realty Fund IV	The purpose of this project is to install a 10.2 kW solar PV system to power the existing 40hp, 20hp, and 10hp electric submersible pumps. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the existing & proposed digital flow meters and well level sensors will also be implemented on the 34.66 acres of wine grapes served by this pump to increase water savings. This project site is located in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$90,573.23	San Luis Obispo

Applicant Organization	Project Description	Funds Requested	County
Christopher Harvey	The purpose of this project is to install a 10.9 kW DC solar PV to power the existing 5 hp electric submersible pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 28.1 acres of wine grapes served by this pump to increase water savings. This project site is in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$70,562.00	Monterey
Spring Creek Vineyards, LLC	The purpose of this project is to install a 16.3 kW solar array to power the existing 10 hp electric submersible Venice Rd. well pump and the 25 hp electric submersible South-East well pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meters and well level sensors will also be implemented on the 24.55 acres of wine grapes served by this pump to increase water savings. This project site is in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$97,639.15	San Luis Obispo
Lee Steele	The purpose of this project is to install a 8.16 kW solar PV system to power the existing 10 hp electric submersible pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 16.6 acres of wine grapes served by this pump to increase water savings. This project site is in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$64,127.03	San Luis Obispo

Applicant Organization	Project Description	Funds Requested	County
Dallas C. Paul Trustee	The proposed project is to install a new 15hp booster pump to receive and use surface water from the North San Joaquin Water Conservation District pipeline, instead of groundwater from a critically over drafted sub-basin. 20 acres of walnuts are currently grown using drip irrigation and a 20hp groundwater well pump powered with a combination of solar and electric energy. This project involves the installation of the following components: (1) a grower-owned turnout on the District pipeline with AG2000 flow meter; (2) a two-way Remote Telemetry Unit (RTU) at the turnout; (3) integrated water management with an Irrometer soil moisture sensing station with a data recorder and a weather station; and (4) the wet-well, centrifugal booster pump, pipe, couplings, and valves needed to connect the new turnout to our existing irrigation system. The proposed changes will result in water savings by providing our farm with the tools and information needed to better manage the total volume of water that will be applied to our existing crops. The reduced pumping and use of high-efficiency pump will reduce greenhouse gases.	$69,931.68	San Joaquin
Hopson Farms, LLC	The project includes the installation of a variable frequency drive (VFD) with a flow meter to an already existing pump that currently operates at an overall pumping efficiency of 75%. The project includes installing real time remote soil moisture monitoring equipment and pressure sensors. The installed flow meter will have a telemetry unit added to automatically measure and monitor water use that will aid in precise irrigation run times. In addition to improving irrigation effectiveness, the project will install a 29.12 kW DC solar photovoltaic (PV) system to power the existing 40 hp pump. This will reduce the amount of greenhouse gas (GHG) emissions associated with the energy required for pumping when combined with the other water saving practices contemplated in this project.	$94,021.23	Tehama
Santa Fe Farms	This project allows for the conversion of 135 acres of walnuts on flood irrigation to citrus on micro sprinklers by installing a new filter station and drip irrigation system. Four existing 75 hp pumps will feed the system and flow meters will be installed at the main filter stations to monitor water use. A soil moisture monitoring unit will be installed to track the movement and plant uptake of irrigation water to ensure minimal use of water while maximizing yield.	$100,000.00	Tulare

Applicant Organization	Project Description	Funds Requested	County
Sadie Tahmazian	This project proposes to employ sustainable solutions to reduce the water usage, energy usage, and carbon footprint on the 34-acre ranch (Sadie Ranch). The ranch water and energy improvements requested under this grant include a 25 HP lift pump to increase access to surface water, replacing antiquated flow meters, and installing a 25.65 kW solar system to power pumping for irrigation. This project goals also includes installing a real time IWM, 3 irrigation monitoring solutions that features irrigation scheduling software which will help reduce water usage for irrigation and reduce GHG emissions through reduced pumping.	$99,689.13	Fresno and Tulare
Richard Samra	This project proposes improved irrigation scheduling and installation of a new 54.4 kW solar photo voltaic system to reduce water use and Greenhouse Gas emissions on a 177-acre vineyard located in San Joaquin County. A weather station and soil moisture probes will be installed to inform irrigation scheduling.	$91,582.00	San Joaquin
Roxbury Ranch LLC	This proposed project includes conversion from hand move sprinkler & flood irrigation. The project includes: (1) converting an existing inefficient electric pump powered by a 237 horsepower diesel generator to a new 50 horsepower premium efficient electric pump powered by electricity (PG&E), (2) installing a 50 horsepower variable frequency drive electric panel, (3) installing a new drip irrigation system per Irrigation Design & Construction (IDC), (4) adding an automation system for valve, booster pump, & fertilizer control, (5) installing 3 soil moisture probes (1 per irrigation set) with remote access to help schedule irrigation events, and 3 inline pressure sensors with remote access to verify irrigation events occurred at the correct time & duration, (6) installing 1 field weather station with remote access and a magnetic flowmeter.	$100,000.00	Merced
JS Johal & Sons Inc.	The goal of this project is to replace an old 30HP electric pump and a 40HP Diesel pump with a 60HP electric pump. The 60 HP pump that will replacing the 2 currently in operation will be located at the main shop where surface water is available. This water will be piped to the field where the two existing pumps are located. The new 60 HP pump along with 4 other meters on the property will be powered by a 147.55kW solar system. Installation of soil moisture sensors and a weather station are also part of the proposed project.	$100,000.00	Yuba

Applicant Organization	Project Description	Funds Requested	County
Osganian	This proposed project plans to use sustainable solutions to reduce the water usage, energy usage, and carbon footprint on the Ranch's 39 acres of almond trees. The Ranch water and energy improvements requested under this grant include a 30 HP lift pump, a VFD and replacement of the antiquated flow meters, this project includes installing a real time IWM, 3 irrigation monitoring solutions that features irrigation scheduling software which will help reduce water used for irrigation and reduce GHG emissions through water use monitoring that results in reduced pumping and water savings.	$54,928.00	Kings
Tahmazian Farming, LP2	This proposed project plans to use sustainable solutions to reduce the Kiwi Ranch's water usage, energy usage, and carbon footprint on the 12-acre ranch that produces Kiwi fruit. The Ranch's water and energy improvements requested under this grant include a 15 HP lift pump to increase the Ranch's access to surface water and reduce dependency on ground water. The goals also include replacing antiquated flow meters and installing a 5.4 kW solar system to power 100% of the Ranch's irrigation pumping. To further reduce water consumption, a real time IWM 3 irrigation monitoring solution will be installed that features irrigation scheduling software which will help reduce water usage and accomplish project goas to reduce GHG emissions by monitoring water use in order to reduce the water pumping.	$62,092.33	Tulare
Looney Vineyards	The project will consist of several needed updates to a vineyard operation. It will include upgrading a tier 1 outdated diesel engine with a new and efficient propane engine and pump. This will have a better GHG emission rating and improve air quality. The site is about 1/2 a mile from a school, so air quality is an important factor to consider. Also, an auto back flush filter will be installed to protect the new irrigation system. The irrigation system will be switched from impact sprinklers to drip irrigation in 24 acres of vineyard. In addition, soil moisture sensors will be installed along with the recently installed flow meter and solar weather station for more precise irrigation. This will help decide when it is the right time to irrigate and at what rate and result in water savings.	$99,998.33	Mendocino

Applicant Organization	Project Description	Funds Requested	County
CMP2 Orchards LLC	This project proposes to include irrigation management practices on a 50-acre parcel. Also, soil moisture stations will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. In addition, pumps efficiency will be monitored by adding a flow meter to the discharges. Furthermore, a solar array and a VFD will be added to the pump to power it. By accessing to this information, along with ET data from a nearby ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$100,000.00	Tehama
Rominger Brothers Farms	This project proposes to enhance efficiency of irrigation in 78 acres of nut orchards. Thus, a VFD will be installed on an existing 60hp booster pump. Telemetry-equipped flowmeters and pressure sensors will also be installed. Several sensors will be used due to the variability in soil type as well as the need for differences in irrigation management between almond cultivars in the same orchard. Soil moisture capacitance probes that take real-time measurements down to 4ft will be installed in the orchards and one weather station with temperature sensor located in the orchard will provide additional data used to help determine the irrigation schedule. Micro sprinklers will also be installed in a young walnut orchard that needs to transition away from drip to a water delivery method better suited its cracking clay soil as well as the expansion of the tree root system.	$62,826.00	Yolo
Jose Garcia	The goal of this project is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$84,996.13	Fresno

Applicant Organization	Project Description	Funds Requested	County
Tahmazian Farming, LP	This proposed project will install sustainable solutions to reduce the water usage, energy usage, and carbon footprint on the 76-acre ranch. The ranch water and energy improvements requested under this grant include a 20 HP lift pump, replacing antiquated flow meters, and a 21-kW solar system to power pumping for irrigation. The project goal also includes installing a real time IWM 3 irrigation monitoring solution that features irrigation scheduling software which will help reduce water usage for irrigation and reduce GHG emissions through reduced pumping.	$91,119.73	Fresno
Kou Yang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	Fresno
Gary & Elene Esajian Family Trust	This project will install state of the art, sustainable solutions to reduce the water usage, energy usage, and carbon footprint on the Ranch's 220 acres of walnuts, almonds and stone fruit. The ranch water and energy improvements requested under this grant include a 30 HP lift pump to increase access to surface water, and replacement of the antiquated flow meters. The project goal also includes installing a real time IWM 3 irrigation monitoring solution that features irrigation scheduling software which will help reduce water usage for irrigation and reduce GHG emissions through water use monitoring that results in reduced pumping and water savings.	$53,321.89	Kings

Applicant Organization	Project Description	Funds Requested	County
Tchieng Yeu	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and a flow meter will be installed as well.	$71,339.80	Fresno
Yee Vue	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and a flow meter will be installed as well.	$68,114.53	Fresno
Pang Chang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and a flow meter will be installed as well.	$60,333.99	Fresno

Applicant Organization	Project Description	Funds Requested	County
Dou Moua Lee	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 20 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	Fresno
Bee Xiong	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$82,917.87	Fresno
Chong Blong Yang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$77,814.93	Fresno

Applicant Organization	Project Description	Funds Requested	County
Phen Vue	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$77,978.93	Fresno
Caffese Farming Company	The project involves connecting to a surface water source from North San Joaquin Water Conservation District, installing a new 75 hp pump with VFD to take the water from the District's system, pipelines to get the water to the farm, and flow meters, soil moistures sensors and a weather station for IWM irrigation scheduling. The project will reduce pumping from an overdraft groundwater basin, conserve water and conserve energy, reducing greenhouse gases. Currently three groundwater pumps (40 hp, 50 hp, 90 hp) are used to irrigate 85 ac grapes, 85 ac walnuts, and 70 ac cherries. There is no flow measurement or use of soil moisture sensors or ET for scheduling.	$100,000.00	San Joaquin
Rabb Family Properties LP	This project is proposed to update an existing system to make it more efficient reducing water usage and GHG's. The goal is to reduce water applied and pump run times through a more efficient and modern system. The current 60 Hp pump is not large enough and at the same time is too large to run blocks as they were planted. This has resulted in having to run blocks with other blocks to maintain a pressure to achieve uniform water distribution. This also results in having to run some blocks longer than others to apply enough water; consequently, resulting in applying more water than needed and longer pump run times than needed. We propose to install a new 125 Hp VFD pump, 10 tank filter station, and new main lines that can accommodate the proper flow of water to the various blocks to reduce GHG and reduce water usage.	$100,000.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Kham Boriboun	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$76,941.29	Fresno
Lakeview Vineyards	This project proposes to replace an existing tier 0 engine that is out dated and inefficient in both output and in air quality. This pump was put into place in 1989 and is a 245 HP 6-cylinder diesel engine that is used for booth frost protection and irrigation for 50 acres of Grapes. There are over head sprinklers in place for frost protection and micro drip emitters for irrigation. Replacing the current engine with a newer one can help reduce greenhouse gas emissions and improve water use and pump efficiency.	$13,152.50	Mendocino
Antonio Ybarra	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Jain jets will be installed on the tape at 36" intervals. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$81,771.24	Tulare

Applicant Organization	Project Description	Funds Requested	County
Jose Vasquez	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Jain jets will be installed on the tape at 36" intervals. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is irrigated by a single,10 HP submersible pump with a flow rate of approximately 95 GPM. The farm is completely irrigated by flood irrigation, using groundwater from a single well. There is not a flow meter currently installed. The farm relies on groundwater and does not receive supplies of surface water that could be measured. The current crop includes Citrus.	$73,027.62	Tulare
Canebrake Vineyards	The project will impact 28 total acres of drip irrigated grapevines. The current irrigation pump, located on the eastern side of the pond, distributes irrigation water from the pond through two main lines, one 6-inch pipe and one 8-inch pipe, and then to several sub laterals which are 50 feet apart. The proposed project would be replacing a tier 0 stationary 82-hp diesel pump engine for a new tier 4 stationary 100-hp diesel pump engine. Also, the current irrigation pump will be replaced with a newer model. The pump station is currently without a flow meter and the project is requesting to equip the pump station with an 8-inch flow meter. Replacing the diesel pump engine would provide increased pumping efficiency, improved fuel efficiency, reduction in air quality pollutants and in energy use. Installing a flow meter at the location would allow measuring of water out flow and improved water usage monitoring. The project would install two soil moisture sensors to assist with irrigation scheduling, including optimizing irrigation timing and length and providing insight on overall irrigation effectiveness.	$69,523.90	Mendocino

Applicant Organization	Project Description	Funds Requested	County
Paso Robles Vineyard Inc.	This project builds upon a previously awarded SWEEP grant which provided soil moisture monitoring hardware for the property. Huerhuero Vineyard is a 524.24-acre vineyard located in Paso Robles Ca. The vineyard overlies the critically over drafted Paso Robles water basin. This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and pump retrofitting at three wells on three APNs impacting 221 acres. A weather station capable of calculating ET and soil moisture probes will be installed to inform irrigation scheduling. The pumping stations will be retrofitted with new media filter stations, automation for pump on/off, and well water level, flow rate and pressure monitoring systems.	$99,977.00	San Luis Obispo
West Star North Dairy	This project will replace the fields current irrigation technique on an alfalfa field to a drip irrigation system and efficiently manage water resources available. Flood irrigation is the current irrigation technique in place and with the conversion to a micro irrigation system, additional flow meter, implementation of a soil moisture probe, an efficient 100hp centrifugal booster pump, an efficient 40 hp floating pump for a lagoon and a 40 hp Variable Frequency Drive (VFD).	$100,000.00	Kern
T & W Farms	This project will replace the fields current irrigation technique on an alfalfa field to a drip irrigation system and efficiently manage water resources available. Flood irrigation is the current irrigation technique in place and with the conversion to a micro irrigation system, additional flow meter, implementation of a soil moisture probe, an efficient 100hp centrifugal booster pump, an efficient 40 hp floating pump for a lagoon and a 40 hp Variable Frequency Drive (VFD).	$100,000.00	Kern
Southern Cross Dairy	This project will replace the fields current irrigation technique on an alfalfa field to a drip irrigation system and efficiently manage water resources available. Flood irrigation is the current irrigation technique in place and with the conversion to a micro irrigation system, additional flow meter, implementation of a soil moisture probe, an efficient 100hp centrifugal booster pump, an efficient 40 hp floating pump for a lagoon and a 40 hp Variable Frequency Drive (VFD).	$100,000.00	Kern

Applicant Organization	Project Description	Funds Requested	County
Maya Dairy	This project will replace the fields current irrigation technique on an alfalfa field to a drip irrigation system and efficiently manage water resources available. Flood irrigation is the current irrigation technique in place and with the conversion to a micro irrigation system, additional flow meter, implementation of a soil moisture probe, an efficient 100hp centrifugal booster pump, an efficient 40 hp floating pump for a lagoon and a 40 hp Variable Frequency Drive (VFD).	$100,000.00	Kern
Lee and Yeung Pistachio Orchard	This project proposes to replace the old and less efficient 30 hp motor with a new high efficiency motor and put VFD drives on both the 30 HP motor and booster pump in the pistachio orchard. This would reduce energy use and decrease GHG emission. Also, a gypsum machine will be added which improves water absorption into the soils. In addition, 2 soil moisture stations (4 probes each) will be installed, which will record soil moisture at depths of 18,24,36 and 48 inches.	$64,818.12	Yolo
Shadowbrook Farms	This project would be replacing 3 different tier 0 engines with upgraded tier 4 engines in order to reduce GHG emissions and replace all pumps for more efficient water use. Also, an 8 Acre ft pond is proposed to get lined to help with loss of water through leaking. The last part of this proposal upgrades the current weather station with a new A753 addWave series 5 weather station to get better weather modeling and in order to add an Enviropro Lite 80cm soil moisture sensor that has a sensor every 4in that takes both moisture volume percentage as well as soil temperature.	$82,953.87	Mendocino
Chi Chong Yang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 5 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. Soil moisture sensors will be used as well as a flow meter. The farm is currently irrigated by flood irrigation, using groundwater from a single well. There is not a flow meter currently installed.	$68,615.65	Fresno

Applicant Organization	Project Description	Funds Requested	County
Will Scott	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 20 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	Fresno
patrick umamoto	This proposed project will remove a 50+ year old 10HP Well Pump and Replace with an energy efficient 5HP Pump. Also, existing wooden water tank will be replaced with 5000-gallon poly tank. Electrical breakers and switches, and all pipes associated with this well will be updated as well.	$30,054.00	Monterey
Zia Xiong	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 15 HP submersible pump with a flow rate of approximately 306 GPM. There is not a flow meter currently installed.	$100,000.00	Fresno

Applicant Organization	Project Description	Funds Requested	County
Roger Clow	The proposed project includes addition of a weather station to determine irrigation time using ET information, a solar system to reduce GHG, a new flowmeter, and some new drip lines with built in emitters to save more water, reduce pumping time and save electricity in the upper portion parcels that are under avocado. For the lower location parcels, a solar system will be installed to reduce GHG, ET and auto start/stop will be added to the weather station to improve decisions on when to start and stop and do it remotely when out of the area to save on water and electricity. Also, a new flowmeter will be installed to be more accurate on reporting and as well as new drip lines with built in emitters to save more water, reduce pumping time and save electricity.	$99,819.83	Ventura
Tong Vang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 25 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	Fresno
Triple S Lamb Feeding, LLC	This project allows for the installation of soil moisture monitoring units and weather stations across 233 acres of grapevines to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. Local weather and ET data will be considered when scheduling irrigation events to reduce excessive pumping and water use. Existing electric well pumps (200 hp and 150 hp) and booster pumps (30 hp and 50 hp) will be used to supply water, and flow meters will be installed to monitor, and record water applied. The use of a soil solution machine will allow me to amend soil chemistry by adding soluble calcium, improving water infiltration and increasing the soil's holding capacity, minimizing water lost to runoff or deep percolation.	$100,000.00	Sutter

Applicant Organization	Project Description	Funds Requested	County
Tim Jones	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 25 HP electric turbine pump with a flow rate of approximately 509.1 GPM (No flow meter currently installed).	$92,682.45	Fresno
Nao Pao Vang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 25 HP electric turbine pump with a flow rate of approximately 509.1 GPM (No flow meter currently installed).	$67,821.65	Fresno

Applicant Organization	Project Description	Funds Requested	County
Raymond Dutro Farms Inc	This project proposes to include irrigation management practices on 268 acres. Soil moisture stations will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, pumps efficiency will be monitored by adding a flow meters to the discharges, and pressure sensors before and after 2 of the filters. Also, an existing diesel pump will be aimed to be converted to electric with a VFD. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$100,000.00	Tehama
Al Smith	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Drip lines installed on the vines about 1 foot above the soil. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	Fresno
Heu Long	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$65,512.40	Fresno

Applicant Organization	Project Description	Funds Requested	County
Moua Lee Vang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The proposed system includes a buried PVC manifold from the pump connection to several valves corresponding to irrigation sets. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$77,851.13	Fresno
Westover Company	This project will include addition of irrigation water management practices on a 154-acre property. We are seeking to add soil moisture stations out in the field to monitor our irrigation efficiency by being able to view the data online that is relayed through a telemetry network. We also want to monitor our pumps efficiency by adding a flow meters to the discharge, and pressure sensors before and after the filters. This would be connected to a telemetry network as well. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$60,758.41	Tehama
Robert Nickelson	This proposed project will Install solar power for ag well and irrigation system to reduce carbon generation and will use drip irrigation for water conservation.	$21,356.84	Solano
Brian Areias	This project includes a 30-acre parcel that will include irrigation management practices on. Soil moisture stations will be added to the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, pumps efficiency will be monitored by adding a flow meters to the discharges, and pressure sensors before and after. This would be connected to a telemetry network as well. We also intend to add a solar array to the pump to power it. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$69,261.96	Butte

Applicant Organization	Project Description	Funds Requested	County
Sang Nam	This project proposes to install 61.6-kilowatt (KWH) solar panels to provide renewable electricity for the pump system. It is estimated that 100% of the electricity usage from SCE will be replaced by the renewable solar energy. In addition, Tule ET sensors, soil moisture sensors with data loggers, and flow meter will be installed to efficiently make accurate irrigation decisions about when and how much to irrigate. Furthermore, the applicant will complete an irrigation-training course and implement compost application during the project term.	$99,996.00	Riverside
Williams Ranch	This project aims on improving water and energy use efficiency on a 34-acre almond ranch. Project consists of installation of a dual variable frequency drive (VFD) panel with output for a new 60 hp submersible well pump or the existing 40 hp booster pump. Project will replace obsolete media filters with four sand media filters (850-1250 GPM). The project will include a 26-Kilowatt grid tied solar system to offset electrical costs from the two irrigation pumps. The project includes a 34-ton gypsum/potash silo with injection pumps to improve soil health. A new flow meter will replace an inaccurate meter.	$100,000.00	Merced
Doug and Julie Freitas Farms	This project will consist of converting from flood to drip irrigation and installation of a 35kw solar system. A Flow meter will be installed to track water use. Additionally, real time remote field monitoring sensors will be installed with a Davis weather station to allow for IWM level 3 to be achieved. GHG reduction is achieved by reduced pumping from our electric and natural gas wells associated with the drip conversion and 35kw worth of solar offsets. Additionally, an old submersible pump will be retrofitted with a new efficient unit.	$100,000.00	Kings
Rucker Vineyards	The project will consist of replacing a ~25-year-old pump and 28 hp Diesel engine system that currently runs inefficiently. Currently, the entire ranch is planted to 19 acres of drip. The current engine is Tier 1 and needs upgrading to meet emission standards and it will be upgraded from diesel to propane. A flow meter will be installed to monitor water use. Also, soil moisture sensors and a weather station will be installed to help with irrigation water management.	$25,166.14	Mendocino

Applicant Organization	Project Description	Funds Requested	County
AYLENE NORRIS	The proposed project will upgrade orchard irrigation system to reduce water consumption and build healthy soils. The project will demonstrate the benefits of 1) installing low pressure irrigation system to reduce pumping and energy use, and 2) monitoring the soil moisture in three locations that have different type of soils in order to manage irrigation frequency and duration. In addition, the project will implement two conservation management practices (mulching and composting) on a 5-acre fruit orchard. The installation of a new booster pump, variable frequency drive (VFD), soil moisture sensors, low pressure irrigation system, pressure compensating micro sprinklers and mulching will help reduce Greenhouse Gases (GHG) and save water in operating the orchard. The goal will be measured by IRROmesh logging system, soil analysis and water usage comparison for three consecutive years. The outcomes will be used to evaluate the adopted practices and to share the information to CDFA.	$42,397.85	Santa Barbara
Lake Ranch Pistachio Investors	This project will replace current worn out twenty-year-old non-pressure compensating drip lines in two of the fields. Also, the old drip lines will be replaced with new Netafim pressure compensating drip lines on 115 acres of pistachios. Seametrics flow meters will be added to each of the fields to enable monitoring the amount of water being applied throughout each season. Currently, irrigation is scheduled using ETo from local weather sources paired with the latest UC crop coefficients, and Syntek soil moisture monitoring and each of the irrigation applications are fine-tuned using a pressure chamber paired with the Pressure Bomb Express app.	$26,113.24	Glenn
Storm Farming Company	This proposed project will swirl from flood irrigation to a solid set sprinkler system and installing soil moisture sensors. This will provide more efficient use of irrigation water and operation	$98,773.64	Butte
Brennen Ruggieri	This project proposes converting 23 acres of walnuts from a flood irrigation system to a micro irrigation. Also, a new pump and solar panels will be added to the farm. The goal of this project is to decrease greenhouse gas emissions and increase water savings.	$99,385.90	Colusa

Applicant Organization	Project Description	Funds Requested	County
Sran Farms	This proposed project will have plant, soil, and weather monitoring sensors as well as automated pump & flow monitoring allowing to closely monitor real time water usage on phones and computers. It will all be automated allowing to schedule irrigation events precisely when needed reducing pumping and unnecessary irrigation events. Also, automated valves will be added to split the south set into subsets that will allow to schedule irrigations based on ET, and plant stress but also soil moisture percolation differences between the west side and east side of the south set. In addition, a VFD will be installed which will provide maintaining pressure despite having different set areas with these new smaller irrigation sets thus saving energy as well as emitting less greenhouse gases. Lastly, FarmX's NDWI and NDVI images will be used to determine areas of the field that are over watered.	$76,170.28	Fresno
Wagner Land Company	This project has 2 parts. First, an existing 125hp pump motor will be converted to a 125hp VFD motor. In order to compensate the pressure differential between the 2 orchards some water is currently bypassed for the smaller 55-acre section as to not over pressurize the system. The bypassing water is a large inefficiency and waste of water. A VFD will provide irrigating both sections separately with their own pressure needs without bypassing water. Second part of this project proposes installation of a weather station, soil moisture probes in 6 different orchards totaling 340 acres of almonds, and pump controls at the 4 different pump sites. Accompanied by flow meters, monitoring real time soil moisture data will become available as well as weather data to prevent over-irrigation and wasting precious groundwater.	$99,982.86	San Joaquin
Anthony Vineyards Inc	This project allows for the installation of a weather station and three sulfur burners to cover 433 acres of grapevines. The entire vineyard is drip irrigated with surface water provided by 3 pumps - 50 hp, 50 hp, 100 hp. Local weather and ET data will be considered when scheduling irrigation events to reduce excessive pumping and water use. Sulfur burners will be installed to amend water and soil chemistry, increasing infiltration rate and water holding capacity to reduce runoff and water lost below the root zone.	$100,000.00	Kern

Applicant Organization	Project Description	Funds Requested	County
Rich-Pak LLC	This project proposes to install Growth Based Irrigation technology to reduce water consumption and increase yields. Irrigation will be managed at IWM Level 3. The project will also reduce GHG emissions through the reduction of automotive fuel consumption and pumping energy. The irrigation system is currently operated manually, and frequent driving is required through the field to evaluate each block each day. Installation of GBI technology can reduce field driving for monitoring water application significantly over time.	$93,861.32	Kern
Olive Glen West LLC	This project seeks to reduce on-farm water use and reduce greenhouse gas (GHG) emissions. Current pre-project flood irrigation system on 235 acres of rice and row crops (170 rice; 65 row crop) will be replaced. Grant funding will be leveraged with matching funds to install a new, post-project micro-irrigation sprinkler system on 235 acres of converted almonds and walnuts (106 acres of almonds; 129 acres of walnuts). Two water sources supply water for this system: surface water from Orland Artois Irrigation District (gravity-fed, no existing pump) and groundwater from an on-farm well/pump. The existing pre-project 150 HP diesel motor that powers the on-farm irrigation pump will be replaced through this project with a John Deere 250 HP motor, to achieve GHG reductions. OGW has not received a past SWEEP award and commits to participate in an irrigation training course during the grant agreement time frame.	$100,000.00	Glenn
Cornerstone Certified Vineyard	This proposed project will install a Ranch System Weather Station and connect to 8 soil moisture probes. Irrigation valves will be connected to weather station hardware which will allow for remote control of the valves, based on soil moisture readings taken by probes. The current pump will be replaced with a new pump with a VFD. Currently, no moisture monitoring devices are used. Irrigation sets are determined by visually assessing the vines, monitoring weather reports, and monitoring ETo status. Moisture probes will be used to monitor and record moisture status. That information will be used to remotely control the irrigation schedule, or to immediately turn on or off valves. On site personnel are available to verify remote success. A flow meter will be installed as well. As a result, GHG emissions will be reduced and water use efficiency and vine productivity will be increased by irrigating at a more precise time when the vines need it.	$68,396.11	Sonoma

Applicant Organization	Project Description	Funds Requested	County
Al Smith	This project will convert the existing flood irrigation system to drip irrigation. The proposed system will include a buried PVC manifold, riser sub-mains, and 18mm drip tube with k-curls to be attached. System will also include control valves, a sand media filter station, and a Jain logic monitoring system. Greenhouse gas emissions will be reduced by improved energy efficiency of the electric pump. The current pump is probably designed for flood irrigation and is estimated to be 30-40 years old. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Drip lines installed on the vines about 1 foot above the soil. This system will use the existing 20 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$92,913.22	Fresno
Fresh Farms Fruits & Veggies, Inc.	The proposed re-circulation project allows all drain from a hydroponic strawberry system to be collected, filtered, and then stored in an untreated drain water tank system. As a precautionary measure against pathogens in the drain water, the drain water will be disinfected by a UV disinfection system and can then be recirculated back to the plants for reuse. In this way, the proposed system allows for the continuous re-circulation of irrigation water in a safe manner, which reduces water and fertilizer use. This system also saves energy by reducing the amount of water used by the farm, and therefore reducing the amount of water that needs to be pumped from the well to the farm (thereby reducing greenhouse gases). Fresh Farms is a 76-acre strawberry farm, operating on leased land. The landlord supplies Fresh Farms, with groundwater using a 150 hp pump. Fresh Farms is somewhat unique in that it uses a hydroponic growing system where strawberries are grown in raised gutters. This means that water and fertilizer are applied directly to the plant roots without the use of soil, and that all water and fertilizer that is not used by the plants (the "drain") can be collected.	$100,000.00	San Luis Obispo

Applicant Organization	Project Description	Funds Requested	County
Hillside Orchards, Inc.	The project is intended to reduce pumping and irrigation needs through better management and scheduling. Currently this 35-acre apricot orchard is drip irrigated with a 200-horsepower diesel engine and booster pump. At the moment the 'hand feel' method is used for irrigation planning. The 'hand feel' method involves a small tool being pushed into the ground to depths of 1-3 feet to pull up layers of the soil which are then felt for stickiness and/or wetness. It is a traditional, but relatively inaccurate method of testing for soil moisture that can lead to unnecessary and wasteful irrigation cycles. A more scientifically accurate way to test for orchard demand is through using a pressure chamber or pressure bomb. A pressure chamber allows the grower to be able to accurately read tree demands at a specific time and so plan to irrigate only when necessary. Integrating a new pressure chamber, along with a weather station for evapotranspiration (ET) accuracy, will make irrigation management more effective and allow for reduced pumping frequency and length. The recipient will be able to better conserve both water and power by only using what is necessary for the trees at the right times.	$9,419.90	Kings
Goldstone Land Co.	This project proposes to substitute a shared 25 horsepower groundwater pump for a 60 horsepower VFD surface water pump at fields 41 and 46 which will draw surface water from the Pixley Slough conveyance system to irrigate field 46 and 54.48 acres of wine grapes through existing drip irrigation, which will also use grant funds to repair leaks caused by wildlife presence. Substituting a surface water VFD pump will result in less energy consumption as the lift will be significantly less (11 feet), as well as provide a relief for the over-drafted Eastern San Joaquin groundwater basin. A 5,580-foot pipeline will be constructed around the existing creek and along the road between 41 and 46 to connect to the distribution of the laterals near the preexisting groundwater pump. A water meter with a Remote Telemetry Unit will be installed on the new pump to measure water use remotely and a capacitance probe will be placed in a representative spot in the field and monitored remotely. Both will be solar powered. There will be no changes made to the existing groundwater pump, which will be used only as an emergency back up during dry years, which are not expected.	$99,990.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Jose Antonio Sanchez Zamora	The purpose of this project is to convert 18.0 acres of Citrus and Stone Fruit from an inefficient furrow irrigation to Micro-irrigation (Fan-Jet system). The project will include a new and more efficient booster pump to pressurize the irrigation system and allow for ditch water to be utilized when available. In addition, the project will have a new sand filter, flow-meter and moisture sensors, increasing the producer's ability to match irrigation to local ET conditions, and reduce water and nutrient losses to leaching.	$99,907.36	Fresno
Birdsong Orchards	This project proposes to install a solar panel array to offset the current electricity used by current agricultural pump. Also, water sensors will be installed to more accurately monitor water levels in the field and irrigate with more precision and less overall water usage. This farm is an organic fruit orchard which has been certified organic by CCOF for the entire 5 years of operation.	$20,837.00	Santa Cruz
Quail Valley Ranch	This project proposes several water conservation and energy efficiency upgrades. The project has three parts: (1) To convert a 25 hp submersible open discharge direct drive well into a mainline pipe while adding a VFD to the pumping station. Currently this well is pumped into a slough where it is then re-pumped with a 7.5 hp ditch pump. The new system would eliminate the need for double pumping. (2) To convert 2, 1100 ft wheel lines into a 589 ft center pivot. Currently the wheel lines are supplied by a 40 hp submersible well pump. The new system would utilize the 25 hp well pump with the new VFD therefore eliminating the need for the 40hp well pump for this system. (3) to install an iMetos IMT 300 weather station.	$90,669.91	Modoc
Dan Clenney Farms	This proposed project will install a new soil moisture monitoring system, flow meter, and solar system. This installation will allow to monitor, account and improve our irrigation management in a 35-acre almond farm. The system will consist of soil moisture sensors at different depths. Scheduling irrigation with this system along with the use of CIMIs data will improve irrigation efficiency. This also enables keeping records of water usage in the fields. The solar system will allow to reduce GHG's emissions from water pumping energy usage requirements.	$88,804.41	Fresno

Applicant Organization	Project Description	Funds Requested	County
ARC Farming Company	This proposed project will Install new concrete sump, concrete dam, overhead electrical service, short couple turbine pump with Variable Frequency Drive (VFD) panel, filter station with flow meter, and mainline to connect to existing sprinkler system in cherry orchard. The purpose is to use irrigation district surface water to replace all or most of the irrigation events that have been done with well water.	$88,000.00	San Joaquin
William and Audrey Churchill, Trustees	The project involves installation of the following on-farm components to enable the farmer to receive and use pressurized surface water from NSJWCD's pipeline instead of groundwater to irrigate an existing walnut orchard: (1) a grower-owned turnout on the District pipeline with meter, (2) a two-way Remote Telemetry Unit ("RTU"), (3) IWM with Soil Moisture Sensors with Data Recorder, and (4) the pipe, couplings, and valves needed to connect the turnout to the grower's existing irrigation system. The proposed changes to the existing on farm irrigation system will save power because the water is being pumped from the river, as opposed to underground, using the district's new high-efficiency pump. The proposed changes will result in water savings by providing growers with the tools and information to better manage the total volume of water that is applied to their crops. The current electric 10 HP pump will be replaced with a electric 5 HP booster pump since the pumping depth will decrease from 131 feet to 8 feet. The solar fuel source for the pump will remain	$65,778.48	San Joaquin
Papacado Farm	This project will enhance irrigation for an acre of new plantings of lavender by upgrading to drip irrigation and moisture sensors.	$2,851.37	San Diego
PLACCO LLC	This project is seeking to monitor the soil moisture conditions in our orchards of Avocados and Citrus to decide and improve irrigation practices. Sensoterra wireless probes will be installed at several key locations around the orchards. The probes will report back real time soil moisture information allowing to understand the current moisture levels throughout the orchards and be more conservative when irrigating the crops. The practice will help to save on water usage and the electric that powers the pumps and motors by being more selective to irrigating our crops.	$100,000.00	Ventura

Applicant Organization	Project Description	Funds Requested	County
Rutz Family LLC	This project builds upon a previously awarded SWEEP grant which funded soil moisture monitoring hardware for the one APN. This project will reduce on farm water use and decrease greenhouse gas emissions in a 158-acre vineyard located in Paso Robles through improved irrigation scheduling, field hardware replacement, and pump retrofitting at one well on one APN covering 106 acres. A weather station capable of calculating ET will be installed to inform irrigation scheduling. The pumping station will be retrofitted with new media filter station, automation for pump on/off, and well water level, flow rate and pressure monitoring systems. 46 acres of old, damaged, plugged drip hose and emitters will be replaced. The vineyard overlies the critically over drafted Paso Robles water basin.	$99,998.00	San Luis Obispo
Collins Vineyard Inc	This project will reduce on farm water use and decrease greenhouse gas emissions in Le Mistral Vineyard through improved irrigation scheduling and pump retrofitting at one well on one APN impacting 146 acres. Two weather stations capable of calculating ET and soil moisture probes will be installed to inform irrigation scheduling. The pumping station will be retrofitted with a new media filter station, automation for pump on/off, and well water level, flow rate and pressure monitoring systems. 32 acres of damaged, plugged drip tubing will be replaced with new drip hose and pressure compensating emitters.	$99,996.00	Monterey
Creston Valley Vineyards	This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and pump retrofitting at two wells on two APNs impacting 32 acres. A weather station capable of calculating ET will be installed to inform irrigation scheduling. The pumping stations will be retrofitted with new media filter stations, automation for pump on/off, and well water level, flow rate and pressure monitoring systems. 6.5 acres of damaged, plugged drip tubing will be replaced with new drip hose and pressure compensating emitters on a third APN. Creston Valley Vineyard is a 270-acre vineyard located in Creston, Ca. The property overlies the critically over drafted Paso Robles water basin.	$99,986.00	San Luis Obispo

Applicant Organization	Project Description	Funds Requested	County
Trilogy Farms & Vineyard LLC	This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and automation of pump functions. Weather stations capable of calculating ET and soil moisture probes will be installed at representative locations to inform irrigation scheduling. The pumping stations will be automated for pump on/off, and well water level, flow rate and pressure monitoring systems. Defiance Vineyard is a 45-acre vineyard located in Creston, Ca. The property overlies the critically over drafted Paso Robles water basin.	$99,888.00	San Luis Obispo
Don Schroer	The purpose of this project is to create an overall more efficient irrigation and energy system. This includes installing a flow meter and a Variable Frequency Drive, (VFD), at the pump to track water flow and pressure, purchasing a pressure chamber to measure water needs of individual trees, and installing a surface water pump station to more efficiently pump water while reducing greenhouse gases. Also, 8 more panels will be installed to already existing solar system to better maximize his energy and further reduce greenhouse gases. Finally, two moisture monitoring stations will be installed throughout the property to track soil moisture, temperature, and humidity using evapotranspiration (ET) technology to create a sustainable surface water irrigation plan.	$100,000.00	Glenn
Nghiem Avocados LLC	This proposed project will: (1) install a flow meter which can read the volume of water hourly and daily (2) replace the main line pipes to get enough pressure and to avoid using the electric pumps then connect to the existing drip irrigation. (3) replace 1,350 existing nozzles, with Rain Bird Precision rotor nozzles which would water the trees much efficiently. (4) to install a solar panel to read the flow meter and timers to save the energy and would automatically shut off the water when raining. (5) Install a system of sensors running by solar panels to be able to shut off automatically the water when the moisture is met. Due to the old pipes, there is a need to replace the pipes to stop the leaks. Thus, to save energy and water, there is a need to retrofit the current irrigation system dated since 1980.	$94,011.27	Riverside

Applicant Organization	Project Description	Funds Requested	County
Sol-Terra Farms LLC	The goal of this project is to increase the efficiency of the land through soil moisture management, ET modeling, weather station inputs etc. The project will also introduce fertigation measures to adjust the pH with a sulfur burner, and automatically dose chemicals through the micro sprinkler system to prevent over feeding fertilizers. This will help reduce runoff and leaching that can occur with the current irrigation method. Citrus is currently flood irrigated. It is old and outdated and not economical. The rows aren't level and as a result uneven growth patterns are observed. Thus, the current irrigation system is not efficient as it overwaters some areas and under waters others.	$100,000.00	Tulare
Field HD, LLC	The project will add VFD's to the pumps to reduce energy usage. The automation system will include Weather sensors (ET), Plant Sensors and Soil Moisture sensors to take full advantage of Growth Based Irrigation Decision support. This will monitor plant and weather events to determine when and how long to irrigate. The irrigation will be monitored and started remotely to eliminate the need for field crews to drive back and forth. The project will install a BIC 2500 controller with Growth Based Irrigation (GBI). This controller will reduce time spent driving through orchards. The net result will be reduced GHG from vehicle fuel consumption and lower pumping energy consumption from the real-time plant and soil monitoring. Flow from the well will be measured by a new Bermad Electromagnetic flow meter.	$94,592.68	Kern
Natalie Behr	This project will save water and reduce energy costs to create long term environmental and fiscal sustainability by converting to a solar energy system, installing a new drip irrigation system, and adding soil moisture monitoring equipment for irrigation scheduling. This project intends to reduce greenhouse gas emissions through installing a solar system to offset the energy used throughout the year to irrigate and maintain orchard. Second, it is planned to conserve water and reduce greenhouse gases by installing a new irrigation system that uniform, efficient, and consistent throughout all the irrigated acres. Lastly, soil moisture monitoring equipment will be installed to accurately time and schedule irrigation and fertigation to meet the needs of the orchard. This will not only save valuable water but also reduces emissions due to pumping.	$69,137.40	Glenn

Applicant Organization	Project Description	Funds Requested	County
Michelle Rossow Farms	The project would convert 1 irrigated cropland field of 80 acres from surface sprinkler hand move irrigation to sub-surface drip irrigation. The drip irrigation system will allow for more precise management of where the water is distributed in the field and to the plant. The project field site will integrate soil management practices that increase water holding capacity. Increasing soil organic matter has multiple benefits including increased water holding capacity of the soil and carbon sequestration. The project will integrate winter cover cropping and compost application. If the project is selected for funding, an application for an irrigation automation system will be done through NRCS. The automation system will further increase the effectiveness of water use and placement of the drip system.	$100,000.00	Merced
Michael Hepworth	This project plans to purchase and implement pressure bomb in to irrigation timing and efficiency decisions. Using the pressure bomb and pressure bomb express service stem water potential will be tracked in the permanent orchard crops (walnut and prune) to help make more informed irrigation timing and duration decisions using established UC guidelines for irrigation management using the pressure bomb. Also, a Davis weather station will be installed to help get an accurate measurement of evapo-transpiration (Et) rates to help determine the amount of irrigation needed to replace water that is lost through Et.	$7,420.82	Butte
Terra Cultura	The goal of this project is to reduce water usage and greenhouse gas emissions from water pumping and irrigation systems. Water is pumped with electricity from a Pacific Gas & Electric connection at the street, up 50 head feet using a 0.5 horsepower booster pump. A 1.5 horsepower Grundfos 6 SQF-3 Helical Motor Solar pump will be installed in the well, as well as a photovoltaic solar system to power the pump and irrigation system. Also, a drip irrigation will be installed to replace the current surface irrigation. To utilize a gravity-fed drip irrigation system with optimal efficiency, a holding tank with a float switch will maximize reductions in greenhouse gas emissions. Also, in-line flow meters, tensiometer soil moisture meters, and smart sensor/wifi irrigation controllers will be installed. This project design also proposes the installation of a 2-rooftop rainwater catchment system, with two 1000-gallon gravity-fed storage tanks.	$77,147.82	San Benito

Applicant Organization	Project Description	Funds Requested	County
Seth Rossow Farms	The project would convert 1 irrigated cropland field of 74 acres from surface sprinkler hand move irrigation to sub-surface drip irrigation. The drip irrigation system will allow for more precise management of where the water is distributed in the field and to the plant. The project field site will integrate soil management practices that increase water holding capacity. Increasing soil organic matter has multiple benefits including increased water holding capacity of the soil and carbon sequestration. The project will integrate winter cover cropping and compost application. An irrigation automation system will be installed through NRCS.	$100,000.00	Merced
Shinta Kawahara Company	This project will install a solar photovoltaic system to power the farm's groundwater pump, switching from fossil fuel-based electricity to a renewable energy source. It will also install a variable frequency drive (VFD) at the well pump to improve energy use efficiency and reduce GHG emissions from groundwater pumping. Finally, through this project the farming operation will acquire a flowmeter and five soil moisture sensors to improve irrigation scheduling and water conservation.	$94,728.00	Santa Cruz
Stephanie Shakofsky	The purpose of this project is to install a 2.0 kW solar PV system to power the existing three (3) hp electric submersible pump and a one (1) hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 10.8 acres of wine grapes served by this pump to increase water savings. This project site is in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$38,513.72	San Luis Obispo
Marsha Ann Veldhuizen	This project would change the existing pump and adding a flow meter and moisture sensing equipment by upgrading from an old turbine pump of 50 HP to a submersible pump of 30 HP with a VFD drive, also adding the flow meter and moisture sensing equipment, with the results of improved electricity usage, water efficiency, and irrigation management to the 90 acres of alfalfa watered by wheel lines. The old well was designed to pump 400 gal/min but is currently pumping 238 gal/min at 35% efficiency. The new pump will run at approx. 72% efficiency.	$24,278.00	Modoc

Applicant Organization	Project Description	Funds Requested	County
Sean V. Doherty Farms	This Project will convert 79.6 acres from a furrow irrigation system to sub-surface drip irrigation (SVD recently installed drip irrigation on the other 77 acres). Project will also replace a 110 horsepower (HP) diesel engine on the pump that provides well/groundwater to the entire 156.6 acres to a more efficient 150 HP electric motor, eliminating the need for diesel use in irrigation equipment. These long-term benefits will be maintained for a least 10 years. Four soil moisture sensors will be installed as well a Variable Frequency Drive (VFD) to further reduce water usage and greenhouse gas emissions. Water usage reductions will be measured by a McCrometers #M0312 flow meter which is already installed and SVD Farms will work closely with CDFA to collect the necessary data and quantify all water savings and GHG emission reductions because of this project. Sean V. Doherty (SVD) Farms has not received a past SWEEP award and commits to participate in an irrigation training course during the grant agreement timeframe.	$86,608.93	Yolo
Tony Martin	This project will implement irrigation management practices for a 22-acre property. The Recipient will install soil moisture technology and consultation for expanded efficiency of water use. The grower will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter. The grower will reduce water use and decrease greenhouse gas (GHG) emissions by irrigating more effectively.	$68,571.00	Kings
Cipponeri Orchards	This project will install a FarmX IWM-3 irrigation management solution to monitor canopy NDVI and water content, soil moisture, plant health, drip line pressure and use this information to schedule irrigation and improve irrigation efficiency and reduce wasted water and pumping energy. Irrigation will be scheduled for 3 and possibly 4 sets based on the FarmX recommendations and scheduling also using valves in the field. These smaller sets will be managed and scheduled by Installation of a flow meter, improvement of pump efficiency by retrofitting the pump and installation of a VFD. Balico ranch is a 120-acre almond orchard currently irrigated by an electric 150HP well and a drip irrigation system.	$99,912.32	Merced

Applicant Organization	Project Description	Funds Requested	County
Kory Ley	The proposed project will cover the entire 55-acre walnut orchard. No upgrade will be made to the 40 hp pump, which can operate the new low-pressure micro-sprinklers. The new system will run at a lower pressure, operating for approximately 144 hours/month. The lower pressure will allow for greater water penetration during the irrigation time, saving on water run-off, making the irrigation more efficient. In addition, solar panels will be installed to virtually remove this pump from the power grid. Currently this 55-acre walnut orchard is irrigated by 3" aluminum sprinkler pipes.	$99,767.21	Sacramento
Lavy Brothers	The purpose of this project is to replace aged, sub-optimal surface irrigation with a Micro-Irrigation system including flow and soil moisture meters. The projects goal is to improve energy usage, water distribution, and soil management for the ranch by use of mulch, ground cover, and IPM. These improvement by the grower accomplishes lower water use and decreased GHG emissions. The improvements will include Solid Set Irrigation System, Turbine Pump Rebowl and a TWIG Automation System.	$100,000.00	Butte
Triple C Farms	The goal of this project is to improve the current irrigation system's efficiency and reduce water losses along an unlined irrigation canal (ditch). The ditch transports irrigation water from our 50 HP electric well to the top of the two fields totaling; 130 acres for furrow irrigation. The unlined ditch will be replaced with PVC components to improve system efficiency, as well as replace pump turbine with a new more efficient pump and motor. Also, a flow meter, a sulfur burner, and site-specific ET components will be added for next year’s Dry Bean crops.	$99,526.68	Sutter
Byron Vance	This project includes a 32.5-acre parcel that will include irrigation management practices on. A soil moisture station will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, pumps efficiency will be monitored by adding a flow meter to the discharge, and pressure sensors before and after the filters. This would be connected to a telemetry network as well. In addition, a solar array will be added to the pump to power it. The current flood irrigation system will be converted to a solid set system powered by a new efficient motor with a VFD.	$100,000.00	Glenn

Applicant Organization	Project Description	Funds Requested	County
Steven Bickley	This project will include installing remote soil moisture sensors (2), pressure sensor and flow meter. Moisture sensors will read soil moisture at 6" down to 60", and a pressure sensor attached directly to the irrigation line to monitor for pressure differences throughout the season. The sensors and a flow meter in combination will help determine irrigation timing based on crop need and known water application rates all in real-time for an increase in irrigation efficiency and water savings. This project also plans on installation of 33.2 kW solar array to offset 100% PG&E energy use for a 100hp pump irrigating walnuts to reduce GHG.	$97,248.68	Butte
Jagdeep Ohri	This project plans to transition from farming 80 acres of rice with a flood irrigation system to farming 80 acres of almonds with a micro sprinkler irrigation system. Also, the old pump will be replaced with a 75 HP pump and moisture sensors will be utilized to help manage water usage.	$83,860.75	Sutter
West Coast Ranches	This proposed project plants to switch from a flood irrigation system to micro-irrigation system and install moisture sensors and variable frequency drive. This will allow to decrease water use and greenhouse gas emissions resulting in more efficient operation.	$62,922.76	Sutter
Kautz, John H & Gail E TR	This project will substitute a shared 50 horsepower groundwater pump for a 30 horsepower VFD surface water pump. Also, a pump and filter station will be installed and a 30 horsepower VFD pump at Pixley Slough to divert water from the slough to the existing irrigation system. A 1,500-foot pipeline will be constructed around the creek, through field 1 and connect to a preexisting pipeline to meet back with existing irrigation. A water meter with a Remote Telemetry Unit will be installed on the new pump to measure water use remotely and a capacitance probe will be placed in a representative spot in the field and monitored remotely. These items will allow to see the amount of water pumped from the slough and the depth the water reaches, thus allowing us to practice better-educated irrigation. Both will be solar powered. There will be no changes made to the existing groundwater pump, which will be used only as an emergency back up during dry years.	$99,990.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Kautz John Fredrick Trustee	This project will substitute field 8's 15 horsepower groundwater pumps for a 15 horsepower VFD surface water pump (field 7 has an easement to use another grower's pump and would substitute this shared pump for the new surface water pump. Existing drip irrigation will use grant funds to repair leaks in the drip hose. Substituting a surface water VFD pump will result in less energy consumption as the lift will be significantly less (11 feet), as well as provide a relief for the over-drafted Eastern San Joaquin groundwater basin. A pump and filter station and a 15-horsepower pump will be installed with a VFD. A 1,600-foot pipeline will be constructed to connect to a preexisting mainline in field 8 and a 100-foot pipeline will connect to field 7's preexisting mainline to meet back with existing irrigation. A water meter with a Remote Telemetry Unit will be installed on the new pump and a capacitance probe will be placed in a representative spot in the field and monitored remotely. Both systems will be solar powered. There will be no changes made to the existing groundwater pump, which will be used only as an emergency back up during dry years.	$99,990.00	San Joaquin
Kautz, Kurt A & Sandra R TR	This project will substitute a 50-horsepower groundwater pump for a 50 horsepower VFD surface water pump at field 24. The existing drip irrigation will also use grant funds to repair leaks. Substituting a surface water VFD pump will result in less energy consumption as the lift will be significantly less (11 feet), as well as provide a relief for the over-drafted Eastern San Joaquin groundwater basin. A 1,150-foot pipeline will be constructed under the field's road. A water meter with a Remote Telemetry Unit will be installed on the new pump to measure water use remotely and a capacitance probe will be placed in a representative spot in the field and monitored remotely. These items will allow to see the amount of water pumped from the slough and the depth the water reaches, thus allowing us to practice better-educated irrigation. Both will be solar powered. There will be no changes made to the existing groundwater pump, which will be used only as an emergency back up during dry years.	$99,990.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Chandler Farms L.P.	This project is to convert a 27-acre field from flood irrigated vines to micro sprinkler irrigated citrus. It will also include well improvements with filter station with flow meter, improved surface water connection, and soil and pressure sensor monitoring station in the field. Further, a solar system will be included to power the electric pump. Existing 15hp electric pump will be replaced with a 25hp electric pump an a 20hp booster pump for surface water use. The irrigation system will convert from a furrow irrigation system to micro sprinklers. As part of this project we will be installing at 31 kWh solar system	$73,770.66	Fresno
Costa & Costa Farms, Inc	This 70-ac project entails a redevelopment of a furrow irrigated vineyard into an almond orchard with double line drip. This will improve the efficiency of the system by having better distribution uniformity and reduced pumping/water use. This will be done by installing a newer 30 hp motor, adding a VFD, installing double line drip, new filters. This project will also be including an 8-kW solar system to offset the electrical use by the pump. Overall water savings for this project is close to 29%.	$100,000.00	San Joaquin
Hyske Orchards	The proposed project will install a solar photovoltaic (PV) system to power the pump (changing from electric to solar), soil moisture monitoring, Davis weather station monitoring, installation of a flowmeter, and the addition of a variable frequency drive (VFD) to the pump and energy system. The pre-project conditions include 17.72 acres of cherries irrigated by micro sprinklers with a 30 hp, 240-volt submersible pump (electric). The irrigation well is 410 feet deep and the pump is at 189 feet.	$90,791.12	San Joaquin
Tutti Frutti Farms Inc	This project would re-design and replace outdated and inefficient irrigation systems at Roblar Ranch (90 Ac) as well as experiment with photo degradable mulches and on-farm composting to save water, reduce greenhouse gas emissions and grow organic crops more sustainably in the Tutti Frutti Farms Inc. At the Roblar Ranch, the propose is to go from a large, inefficient diesel motor and old pump to a variable frequency drive (VFD) pump and electric motor. Overhead sprinklers will no longer be used, and drip irrigation will be used completely.	$99,869.12	Santa Barbara

Applicant Organization	Project Description	Funds Requested	County
T-Ranch LLC	The project will include installing Hortau soil moisture sensors to irrigate more effectively.	$12,000.00	Madera
Pegasus LLC	The project will include installing Hortau soil moisture sensors to irrigate more effectively.	$75,000.00	Madera
Danelle A Grove	This project includes the installation of solar system on the Grove Family Farm, which will reduce energy requirements for irrigation and a soil moisture sensor station will be installed to better manage soil moisture content, thus increasing irrigation efficiency. The Grove Family Farm project will include converting permanent pasture irrigation from the well to Orland Unit Water Users Association surface water right by removing the obsolete open concrete ditch and replacing it with buried pipeline. Flow meters will be installed on both the pump and on the Orland Unit Water Users Association water pipe, which will help account for the amount of water used in every irrigation. Furthermore, the Grove Family Farm will complete an irrigation training course. These installations will help the Grove Family Farm agricultural operation become more sustainable, reduce water use, and improve water use efficiency.	$87,664.00	Glenn
Eco Terreno, Inc	This project will reduce on farm water use and decrease Greenhouse Gas emissions through conversion of irrigation pumps powered by diesel fuel to off-grid solar power, improved irrigation scheduling and automation of pump functions in Cisne Vineyard. A soil moisture probe and infrared plant stress sensor will be installed at a representative location to inform irrigation scheduling. The pumping stations and valves will be automated for pump control.The diesel irrigation pumps will be converted to electric pumps powered by the installation of a 4.5 KW solar photo voltaic system on an existing shed structure.	$99,718.00	Sonoma
Sanjiv Midha	This project proposes switching from electricity to solar and installing moisture sensors to decrease greenhouse gas emissions and increase water savings.	$80,490.21	Sutter
Amarjit Sohal	The purpose of this project is to install a PV Solar Energy System on my 105 acres of almonds to cut down on greenhouse gas emissions and electrical costs. Also, moisture sensors, a weather station and VFDs will be installed.	$64,686.88	Yuba

Applicant Organization	Project Description	Funds Requested	County
Hedgerow Farms Inc	The purpose of this project is to install VFD pump with flow meter in Field 8 (F8) to appropriately measure and adjust flow rates for the size of the block to irrigate. This pump currently services 167.6 acres of 6 different fields which are subdivided into 83 different blocks with variable sizes, crops and water requirements. Soil moisture sensors will be installed in six locations (two depths at each location, that will aid in precision irrigation scheduling. Underground main line with riser valves will be extended to F9 and F10, going under Union School Slough, for ability to irrigate using wells, eliminating need to cross above slough with aluminum pipe. Currently, Hedgerow Farms (HRF) is using an above ground main line with moderate to heavy leaking. In addition to unlined ditches that lose water through seepage, burying and gluing solid set PVC underground, all leaking will be eliminated in addition to increasing access to fields, while irrigating others. Currently above main line blocks fields from maintenance.	$55,074.70	Yolo
JW Farms	This project will support installation of a 7.7 kW solar photovoltaic system to power our groundwater pump and irrigate our 14ac organic farming operation using clean renewable energy. With this project a new flowmeter and six soil moisture sensors will be installed, to better track and improve irrigation scheduling and conserve water.	$35,692.20	Santa Cruz
R Gorrill Ranch Enterprises	The proposed project will replace an existing flood irrigation with a more efficient micro-irrigation system to irrigate 193 converted acres of almonds on the same impacted project area. Micro-sprinklers and related irrigation system supplies will be purchased and installed, contributing to water savings. Grant funds will also support the purchase of a 75 HP booster pump and Variable Frequency Drive (VFD) to replace one of the three 50 HP on-farm pumps supplying water to the impacted acreage, contributing to greater pump efficiency and reduced energy use. Cost-share will fund the needed solid set irrigation system pipe and materials; soil moisture sensors; a 100 HP booster pump and VFD to replace a second 50HP pump supplying water to the impacted acreage; and sales tax and installation labor associated with all these costs. Flow meters will be included in the project to ensure effective monitoring of water savings.	$100,000.00	Butte

Applicant Organization	Project Description	Funds Requested	County
Hedgerow Farms, Inc	The purpose of this project is to replace leaky above ground main line and unlined ditches with buried main line with riser valves and install soil moisture sensors in four locations. Currently, Hedgerow Farms (HRF) is using an above ground main line with moderate to heavy leaking. In addition to unlined ditches that lose water through seepage, burying and gluing solid set PVC underground, all leaking will be eliminated in addition to increasing access to fields, while irrigating others. Currently above main line blocks fields from maintenance. Work cannot be completed in areas where excessive leaking is occurring from poor connection points along the pipeline. HRF produces California native seed of known genetic origin for use in habitat restoration projects. We employ wildlife friendly farming techniques, devoting substantial acreage to habitat in hedgerows, vegetated canals, swales, roadsides and tail water ponds. The SWEEP project will further enhance HRF's commitment to sustainable farming practices by increasing our water and energy use efficiency.	$28,973.09	Yolo
Nathan Stewart	This project proposes transitioning from a flood irrigation system to a drip line irrigation system, add moisture sensors & a flow meter in 17 acres of citrus. It also plans to update the existing pump.	$46,210.97	Tulare
Table Bluff Farm LLC	This purpose of this project is to reduce dependence on pumped groundwater thus reducing water bills through the implementation of micro drip irrigation systems for 1.0-acre market garden farm, and .5 acre cut flower market garden. Also, the goal is to design and implement a low-pressure micro drip irrigation system for the current NRCS grant approved greenhouse and 1.0-acre market garden crops and .5 acre cut flower garden to reduce water usage. Low Pressure Micro drip system will include drip irrigation to market garden crops on 1 acre and .5 acre cut flower garden. Use of 8 in spacing pre-filled Netafim drip system .875 gph at 10000 ft of drip irrigation line with multiple zone-controlled timers and emitter spacing for various crop spacing in garden beds and rows will be monitored using flow meters and moisture sensors, and irrigation controls. Netfim drip line systems and water meters will be used as outlined in the Budget Worksheet. The goal of this program is to improve soil quality and health while reducing water usage on our irrigated crops from overhead sprinkler systems to micro drip low pressure systems.	$9,505.00	Humboldt

Applicant Organization	Project Description	Funds Requested	County
Bellino Farms	Bellino Farms proposes the installation of soil moisture monitoring, weather (ET) monitoring, and the use of existing flowmeters. A flow meter will be added to the pump The Harrold Ranch will also change from micro-irrigation to drip and will have a new electrical pump installed. This pump will supply the Harrold and Lemon Ranches with South San Joaquin Irrigation District water instead of the existing groundwater pump. Four VFDs are also being proposed for the ranches existing electrical pumps. Installation of soil moisture monitoring, weather (ET) monitoring, and the existing flowmeters will help save water and consequently decreasing pumping time, reducing GHG emissions. Compost, mulch, and resident cover will be used.	$99,806.56	San Joaquin
Zenith Ranch LLC	This project proposes installation of the irrigation system upgrades to monitor the existing irrigation system for pistachios in Zenith ranch. The installation of the proposed system will help to utilize the existing systems more efficiently. In-field real time irrigation monitoring and management will allow the efficient use of our current pumps and filter stations. In return, this will save us water and energy in a cost-efficient way and reduce environmental hazards as well (reduce nitrate leaching, etc). Additionally, the soil-amendment program including field and water run gypsum applications as well as cover crop will help in increasing soil improvement and water conservation.	$82,670.73	Kings
Ronald T. Oye	The proposed project involves the installation of a 30hp electric pump with a Variable Frequency Drive to enable receiving and using surface water from North San Joaquin Water Conservation District, instead of groundwater, to irrigate three different sized blocks of trees. The proposed irrigation improvements include: (1) a grower-owned pump station with a centrifugal booster pump, flow meter, and trash cleaning conveyor on a channel used as part of the NSJWCD conveyance system; (2) the pipe, couplings, and valves needed to connect the pump station to our existing irrigation system; and (3) an Irrometer Watermark moisture sensor. The proposed changes will result in water savings by providing tools and information to better manage the total volume of water we apply to the crops. The reduced pumping and use of higher efficiency pump will reduce greenhouse gases.	$86,016.10	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
Balfour Enterprises, Inc.	The proposed project will install 99 acres of drip irrigation for organic row crops in Yolo County. The project includes a new high-efficiency 50 HP electric booster pumping plant with Variable Frequency Drive, upgraded electrical service panel, new flow meter, buried high-head pvc mainline pipe, low-flow drip tape, filtration media, and installation labor. The project will save water and reduce greenhouse gas emissions in multiple ways, including: 1) installing drip irrigation in place of high pressure sprinklers, 2) converting a 154 HP diesel booster pump to 50 HP electric booster pump, 3) lowering the irrigation system pressure , 4) installing a VFD to regulate constant pressure at variable flow rates 5) the introduction of CIMIS and UC Davis soil and weather data for irrigation scheduling.	$81,274.30	Yolo
Mark Evans Jr	This project proposes to switch from flood irrigation to micro irrigation and install a moisture sensor.	$45,716.88	Sutter
Estate Vineyards LLC	This proposed project will impact 376 acres overlying the over drafted Paso Robles ground water basin. This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and pump retrofitting at three wells on two APNs. Weather stations capable of calculating ET and soil moisture probes will be installed at representative locations to inform irrigation scheduling. The pumping stations will be retrofitted with automation for pump on/off, and well water level, flow rate and pressure monitoring systems. Creston Rd Vineyard is a 625-acre vineyard located near Paso Robles, Ca.	$99,973.00	San Luis Obispo
Dwinger Family Farm	This project incorporates new technology to reduce overall water usage and greenhouse gas (GHG) emissions. The project includes initial installation of a drip system for a new orchard with conversion to a micro sprinkler irrigation system with frost controls incorporated, real time remote field monitoring sensors, flow meter, a weather station, and upgraded pump, all of which will help irrigate more efficiently and reduce (GHG) emissions. Soil moisture sensors will be used to determine the appropriate interval between irrigation. These remote field monitoring units will include weather sensors to help irrigate based on evapotranspiration (ET), and prevent unnecessary irrigation events.	$66,830.00	Sutter

Applicant Organization	Project Description	Funds Requested	County
Tretheway Property	This project will involve the installation of facilities to enable our farm to receive and use surface water from the North San Joaquin Water Conservation District, instead of groundwater, to irrigate existing orchards. Proposed irrigation improvements include: 1) one grower-owned turnout on the District pipeline with flow meter; 2) a two-way Remote Telemetry Unit (RTU) at the turnout; 3) one Sentek soil moisture station; 4) the pipe, couplings, and valves needed to connect the pump station to our existing irrigation system; 5) a weather station to assist in real-time evaluation of environmental conditions on the farm; and 6) a solar electric system to run a new 5hp centrifugal booster pump.	$90,171.13	San Joaquin
San Joaquin Valley Quality Cotton Growers Association	This project proposes installation of solar arrays for powering up electrical irrigation pump and reduce greenhouse gas emissions.	$100,000.00	Kern
Christopher Corsones	This project plans to install soil moisture sensors, flow meter, timers and valves, related electrical work, and use the weather data to schedule irrigation.	$25,000.00	Ventura
BECKSTOFFER VYD XX, LP	This project will replace five Johnston Pump. Co. pumps and five Detroit diesel engines installed in 1974 that are 220 HP and 2,000 RPM with five propane tanks that will also be 220 HP at 2,000 RPM. In addition, a pond liner will be installed in order to prevent further leakage from occurring. This project will affect 174.02 acres of wine grapes.	$99,973.84	Napa
Avenales Cattle Co.	This project proposes to install three solar arrays totaling 706.5kW to offset electrical energy being used for our vineyard, irrigated pastures and farming lands. One array will be on a raised structure to offset a bank of four 100HP booster pumps and one 40HP booster pump that pump from a reservoir to vineyards, pastures and farming fields. Two other arrays will offset energy used to pump groundwater to the reservoir from a 50HP pump and 60HP pump. The water saving component is two AquaCheck soil moisture probes from Ranch Systems to monitor vine water loss at two locations in each distinct part of our 100-acre vineyard (see map). The purpose of the monitoring is to reduce the amount of applied water to each portion of the vineyard to only what the vines need, rather than applying water on a schedule or assumptions based solely on ET information.	$100,000.00	San Luis Obispo

Applicant Organization	Project Description	Funds Requested	County
Barr Creekside Vineyard, LLC	This project will replace the existing electrical generator with a PG&E connection and solar panels. A weather station and soil moisture monitoring system will be installed and used to reduce irrigation water by more accurately satisfying plant water requirements. Currently farm 57 acres of wine grapes and 2 acres of olive trees. An existing ag irrigation pump and propane fueled motor has just been converted to a 75 horsepower, high efficiency, electric submersible with VFD. Timing of growing season dictated that this work be done before grant cycle.	$100,000.00	San Luis Obispo
Wilson Farms Inc.	The purpose of this project is to install a 38.4kW DC solar Photovoltaic (PV) system to power irrigation pumps. Energy to run a 30hp, 25hp, and a 50hp irrigation pumps will be offset by the energy produced from the project reducing the corresponding Greenhouse Gas emissions produced under traditional means. In addition, the 25hp pump will have a VFD added to it so that it may run more efficiently. Also, 5 soil moisture probes will be added that will allow the growers to know exactly when irrigation reaches the extent of the root zone.	$99,580.00	Yolo
Pernid Ricard Winemakers Napa, LLC	This project proposes upgrading the existing irrigation system to add in soil water monitoring equipment and automated irrigation scheduling and control across the entire system. A fully planted 111.5-acre vineyard that produces wine grapes is currently irrigated with a manual system and no capabilities to measure soil or plant water availability. The motor is 40HP and the pump is 30HP and a recent test shows it is operating at 53% OPE.	$24,918.86	Napa
Rancho Soledad DeLuz	This project proposes to improve the existing irrigation system by installing a flow meter, a VFD controller, soil sensors and if need be, replace the current sprinkler heads to more efficient ones. The goal is to reduce our water usage by at least 15% and reduce GHG. The proposal also includes the installation of solar power consisting of 72 LG Modules of 24.12kW DC solar panels. These panels of renewable energy will supply all necessary power to operate the pump system and reduce GHG emissions. The current irrigation system on the 40-acre farm is outdated and inefficient. The primary water source is an onsite ground water well powered by a 30 hP submersible turbine pump which is powered by (SDG&E) electricity. A pump test reported an overall pumping efficiency of 61%.	$100,000.00	San Diego

Applicant Organization	Project Description	Funds Requested	County
Canopy Orchards, LLC	The project will include installation of Hortau soil moister sensors to improve efficiency of irrigation and water savings.	$30,000.00	Kern
Greenleaf Orchards, LTD	The project will include installation of Hortau soil moister sensors to improve efficiency of irrigation and water savings.	$70,000.00	Madera
The Orchards, LLC	The project will include installation of Hortau soil moister sensors to improve efficiency of irrigation and water savings.	$17,000.00	Madera
Silverdust, LLC	The project will include installation of Hortau soil moister sensors to improve efficiency of irrigation and water savings.	$12,000.00	Madera
Rimon Farms, LLC	The project will include installation of Hortau soil moister sensors to improve efficiency of irrigation and water savings.	$100,000.00	Kern
Gary Richardson Farms	The purpose of this project is to install Growth Based Irrigation technology to reduce water consumption and increase yields. Irrigation will be managed at IWM Level 3. The project will also reduce GHG emissions through the reduction of automotive fuel consumption and pumping energy. The system is currently operated manually. Installation of GBI technology can reduce field driving for monitoring water application significantly over time. Flow from the well site will be measured by the existing flow meter. This meter will be upgraded with a pulse output that will be monitored by the control system. The filter station has an existing water meter that will be read by the BIC 2500 to provide real time flow information and reporting. There are no proposed irrigation system improvements with this project. Only water management solutions.	$63,803.83	Kern

Applicant Organization	Project Description	Funds Requested	County
Fistook Farms, LLC	The project will include installing Hortau soil moisture sensors to improve water savings.	$30,000.00	Kern
Aviv Farms, LLC	The project will include installing Hortau soil moisture sensors to improve irrigation efficiency for the almonds.	$23,000.00	Kern
Dosanjh Brothers	The project uses the proven science of open-air crop carbon enrichment for water savings and GHG removal. This project encompasses 20 acres of almond crop under an open-air carbon enrichment biosphere with 20 % less irrigations water supplied, compared to 20 acres of control crop not under carbon enrichment with a normal irrigation rate of irrigation water supplied. The project will be composed of a source of a CO2, specifically from a refinery with 100,000+ tons/year of CO2 in clean flue gas, a portion of which will be cooled and redirected to the almond orchard directly across the street. Also, the project will be composed of provisions to condition and deliver the CO2 to the crops, specifically with ducting, a cooling system, and a blower, and a system to feed the CO2 to the almond orchard canopy.	$100,000.00	Kern
TREBORCE VINEYARDS	This project proposes to increase efficiency of a current 15HP submersible well pump through installation of a Solar system. The pump will be fitted with a VFD and New Pressure Tank for more efficient motor cycling for less time and in three blocks of vines instead of irrigating all the vines at the same time. Additionally, the plan is to install a second drip line in the entire vineyard to separately water the 4500 replants. Also, the redoing the plumbing lines and existing uprights installed in each vineyard allows two different water systems to irrigate independently and conserve water. The dual installation will allow to provide extra water and fertigation to the young replants, until established, and cut back on watering the older vines. The grower will also continue to explore the potential installation of a smaller 10 HP Pump with VFD to replace the 15 HP, which will also allow to reduce the solar panel array.	$100,000.00	Sonoma

Applicant Organization	Project Description	Funds Requested	County
P & K Farms	This project will support implementation of a 20.8 kW solar PV system to power our groundwater pump and replacement of an old variable frequency drive (VFD) with a new and more efficient unit. Together, these two improvements will help reduce greenhouse gas emissions and conserve water in our farming operation.	$99,953.66	Monterey
Rosalio Curiel	This project includes multiple properties encompassing 47.57 acres that will include irrigation management practices on. Soil moisture stations will be added out in the field to monitor irrigation efficiency. Also, VFDs and Motors will be purchased for the existing pumps. This would be connected to a telemetry network as well. In addition, a solar array is intended to be added to the pumps as well to power them. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$100,000.00	Tehama
Advanced Growth Management	This project proposes to install 2 soil moisture monitoring stations and a 16.8kw solar array on 20acres of mature almonds planted in 2011.	$56,870.00	Fresno
Tyler Giesbrecht	This project allows for the installation of a soil moisture monitoring unit and weather station across 20 acres of almonds to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. Local weather and ET data will be considered when scheduling irrigation events. An existing 15 hp electric pump will be used to supply groundwater, and a flow meter will be installed to monitor, and record water applied. A sulfur burner will amend soil and water chemistry by safely acidifying irrigation water, improving water infiltration and increasing the soil's holding capacity, minimizing water loss.	$35,029.70	Glenn
Grapeman Famosa Ranch LP	This project allows for the installation of soil moisture monitoring units and a weather station across 294 acres of grapevines to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. Local weather and ET data will be considered when scheduling irrigation events to reduce excessive pumping and water use. Three existing electric pumps will be used and a flow meters will be installed to monitor, and record water applied.	$81,779.14	Kern

Applicant Organization	Project Description	Funds Requested	County
Behring Family LLC	The purpose of this project is to install a flow meter, 125 HP VFD pump and 29.58 kW solar system to supply energy for the new irrigation system in 100 acres of land in transition from almonds to walnuts. The old sprinkler system will be replaced with a low-pressure micro sprinkler system. A new irrigation design and the installation of the new VFD pump will allow the recipient to irrigate entirely from one well. An old diesel well is on the property as well that was used for the almonds, but with the new irrigation system, it will not be used for the walnuts.	$100,000.00	Butte
Grapeman Mavericks Ranch	This project allows for the installation of soil moisture monitoring units and a weather station across 348 acres of grapevines to track the movement and plant uptake of irrigation water. Local weather and ET data will be considered when scheduling irrigation events to reduce excessive pumping and water use. 4 existing electric pumps will be used to supply 80% groundwater and 20% surface water, and existing flow meters will be connected to telemetry to monitor and record water applied.	$72,099.99	Kern
Serine Cannonau Vineyards	The purpose of this project is to install a 13.6 kW solar PV system to power the existing 10 hp electric submersible pump and a 5 hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 20 acres of wine grapes served by this pump to increase water savings. This project site is located in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$79,238.32	San Luis Obispo
Melinda Nickler	This project will be a complete overhaul or the pump and irrigation system that serves 18 acres of prunes and 9 acres of walnuts. A new pump and filtration system complete with flow meter will replace the 24-year-old, highly inefficient system. A solar array will be installed to provide renewable power to the pump. The 24-year-old, inefficient drip irrigation system in the 18 acres of prunes will be replaced and soil moisture monitoring equipment will be purchased to ensure efficient water usage.	$98,795.26	Tehama

Applicant Organization	Project Description	Funds Requested	County
Malibu Vineyards LP	This project allows for the installation of soil moisture monitoring units and a weather station across 313 acres of grapevines to track the movement and plant uptake of irrigation water to ensure that a minimal amount of water is used while maximizing yield. Local weather and ET data will be considered when scheduling irrigation events to reduce excessive pumping and water use. Three existing electric pumps (300 hp, 200 hp, and 150 hp) will be used to supply 80% groundwater and 20% surface water, and a flow meters will be connected to telemetry to monitor and record water applied. A pressure bomb would also be used to irrigate even less frequently by evaluating real-time plant stress level.	$77,342.96	Kern
Kevin Hebrew	This project includes a 20-acre property that will include irrigation management practices. A soil moisture station from Irrigate.net will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, a flow meter will be added to the discharge, and pressure sensors before and after the filter to monitor efficiency of irrigation. This would be connected to a telemetry network as well. Also, a solar array will be added to the pump to power it. A VFD will be installed at the pump to help more effectively pumping. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$44,391.21	Tehama
Sycamore Marsh Farm	This project plans to significantly improve water efficiency and reduce greenhouse gas (GHG) emissions at field S3 of SMF's existing farm at the Sycamore Marsh Farms (SMF). The proposed funding will allow SMF to purchase and install irrigation infrastructure needed to transition crops at field S3 from flood-irrigated alfalfa (50 acres) to drip-irrigated almonds (50 acres), greatly reducing applied water demand. In addition to the crop transition, SMF will also install a new VFD system on the existing 60 HP booster pump (downstream of the existing 150 HP well, which already has a VFD) for the project, install a flow meter, and purchase and operate a new pressure chamber (pressure bomb) system and 8 new tensiometers to precisely determine watering amounts and schedules, while avoiding over-application.	$78,527.98	Colusa

Applicant Organization	Project Description	Funds Requested	County
Rolling Hills RR Inc	This project includes installation of double drip irrigation for water conservation, Variable Frequency Drive (VFD) installation that allows Recipient to pump water more efficiently and save energy. Also, solar installation is planned to provide approximately half power necessary to operate well and irrigation requirements with future goals of full power solar generation. The installation of real time remote field monitoring sensors, flow meters, and a solar system, will help irrigate more efficiently and reduce greenhouse gas (GHG) emissions. The sensors installed will be reading soil moisture from 4" to 48" depending on configuration. These soil moisture sensors will be used to determine the appropriate interval between irrigation, depth of wetting, and depth of extraction by roots and adequacy of wetting. Soil temperature sensors will help fertilize appropriately at the best temperatures. Flow meters will also aid to improve water use efficiency by allowing the Recipient to quantify the water used per irrigation events. Ultimately, this project will help improve water use efficiency while reducing GHG emissions and fertilizer leaching. Furthermore, the Recipient will complete an irrigation training course during the project.	$100,000.00	Tehama
Lyall Enterprises, Inc	The project will be on a 50-acre portion of a 260-acre citrus and avocado ranch and will include a solar system to help offset electricity use on 2 water wells, therefore reducing greenhouse gas emissions. Soil moisture sensors and a flow meter will also be installed as a part of this project.	$100,000.00	San Diego
Rancho Meladuco, LLC	This project proposes the conversion of 3 acres of dates in Riverside County from flood irrigation to micro/drip irrigation. A booster pump station, new filtration unit, mainlines and laterals will be installed to provide ten 2.0 gph emitters per tree. A soil moisture probe will be installed to inform irrigation scheduling.	$99,999.00	Riverside
John Bava and Son, Inc.	The proposed irrigation improvements include: (1) a grower owned pump station on a channel used as part of the NSJWCD conveyance system, with meter, (2) a	$96,772.03	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
	two-way Remote Telemetry Unit at the turnout, (3) the pipe, couplings, and valves needed to connect the pump station to our existing irrigation system, and (4) a weather station, with soil moisture sensors, to assist in real-time evaluation of environmental conditions on the ranch. The proposed changes to the existing on-farm irrigation system will save power because the surface water is being pumped from Bear Creek, as opposed to underground, using the district's new high-efficiency pump, and will only need minor boosting of pressure from the district's distribution channel to this ranch. The proposed changes will result in water savings by providing tools and real time weather information to better manage the total volume of water we apply to our crops.		
Linda Chu	This project proposes to install Certa-set PVC piping systems with Nelson Windfighter sprinkler heads on 60 acres of row crops as a solid set system. It is designed for use in agricultural irrigation. Certa-set is leak-proof and corrosion resistant. By using this system, it will eliminate puddling and conserves water, this system is leek-free even at startup and shutdown, maintains watertight pressure seal through multiple disassembly and reassembly cycles. The extremely smooth interior surface improves water flow, reducing pumping cost.	$100,000.00	San Benito
Wawona Farm Co	This project allows for the installation of 3 new drip systems, 6 VFD's and soil moisture monitoring units across 4 ranches totaling 143 acres of stone fruit to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. There are 6 existing electrical pumps (40 hp, 20 hp, 20 hp, 15 hp, 20 hp, 15 hp) used to supply 100% groundwater, and flow meters will be installed with the new systems.	$100,000.00	Tulare
Sumanpreet Singh	This project proposes to improve water use and fuel efficiency of almond orchard by replacing currently used 1500 gpm diesel pump with solar/propane pumps, using low pressure systems, installing VFD and soil moisture level monitoring devices. Also, NRCS conservation practice standards will be used.	$100,000.00	Yolo
F & S Solari	The project includes installation of real time remote field monitoring sensors (pressure sensors and soil moisture sensors) and flow meters to improve irrigation efficiency. It incorporates a VFD (one of the two pumps captured by this project	$99,810.98	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
	already has one) and a solar system to help reduce greenhouse gas (GHG) emissions. A weather station will be installed. Flow meters will also aid to improve water use efficiency by allowing the recipient to quantify the water used per irrigation event. The grower will attend an irrigation workshop. The project location is within a critically over-drafted area. F&S Solari will be installing an additional solar system at their expense within the same calendar year at the opposite end of the same ranch in a commitment to improve efficiency and save on emissions. Telemetry, sensors, flow meters and a weather station will also be added this year to this secondary location at the owner's expense. F&S is awaiting the drilling of a new well at this location to incorporate a VFD at a future date.		
Dutra Dairy	The Dutra Almond Drip Conversion Project proposes to install a pressurized drip irrigation system on 111 acres of almonds that are currently flood irrigated. The project will reduce the annual run-time of one 115hp diesel well and eliminate the use of a second 124 hp diesel well, reducing the diesel usage. In addition, irrigation applications will be reduced because of better controlled irrigation matched to crop ET. Soil moisture monitoring equipment and flow meters will be utilized to track water applications and should improve water and nutrient use efficiency greatly. The irrigation system was designed to meet NRCS 441 standards and will have a 10 year plus life span. In addition, the reduced wetted area on the orchard footprint as well as fertigation system will reduce the need for herbicide applications and further reduce emission by less passes of machinery through the fields.	$99,613.39	Kings
Don Headrick Farming	The proposed project application will convert 80 acres of pistachios on flood to irrigation to drip irrigation and will also install a solar system, weather station, valve automation with automatic adjustments to irrigation scheduling based on actual on-site conditions.	$99,662.31	Kings
Hummingbird Ranch	This project will support installation of a 10.4 kW solar PV system to run the groundwater pump at our 3.5ac farming operation. It will also support shifting irrigation of a portion of our annual row crops from a sprinkler to a drip system,	$46,805.78	Santa Cruz

Applicant Organization	Project Description	Funds Requested	County
	and adoption of soil moisture sensors to inform our irrigation scheduling. Together these practices will help conserve water and reduce greenhouse gas emissions from our farm.		
TOM FLUX	This project aims to reduce the ranch energy consumption by replacing an old energy inefficient 30 HP turbine pump with a new more efficient 30 HP turbine pump, including a flow meter, and soil moisture sensors with data logger. Combining that with replacing the inefficient wheel style irrigation lines with a new efficient center pivot system to save water and reduce GHGs while farming 51 acres of alfalfa.	$96,490.20	Lassen
Jessie Maragoni - Trustee of Maragoni Marital Appointment Trust	This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and installation of a 20.4 solar P/V system on one APN. A weather station capable of calculating ET, and soil moisture probes will be installed to inform irrigation scheduling. The 20.4 KW system will produce 33,215 kWh/year. The pump station will be upgraded with water level, flow and pressure monitoring and automation of pump functions. The project area overlies the impacted San Joaquin - Kings ground water basin. Indianola Ranch is a 19-acre almond orchard located in Fresno County.	$88,541.00	Fresno
Walter Mizuno	The focus of this project is to convert 37 acres of flood irrigated stone fruit fields into a modern, micro-sprinkler-based irrigation system. The proposed system will integrate data from soil moisture sensors, as well as weather station and crop ET, to determine the proper timing and amount of irrigation water to apply. Another expected benefit will be the ability to apply nutrients in the correct amounts directed toward the root zone at the proper time, saving material, minimizing leaching, and providing optimum crop benefit. The equipment being requested for the conversion will be integrated with a recent upgrade to the farm's irrigation pump which includes a VFD.	$33,266.61	Fresno
Hawes River Acres	This project aims to reduce greenhouse gasses (GHG) and decrease unnecessary water usage. The first step will be replacing the current diesel pump with a new electric pump and a variable frequency drive (VFD) with a flowmeter to reduce	$99,900.00	Shasta

Applicant Organization	Project Description	Funds Requested	County
	overuse of water. The new pump will be powered by the recipient's newly installed solar system. The second of this project will be to install a high efficiency solid set irrigation system on 60 acres of Walnuts that are currently being irrigated using an outdated 3 inch hand line system. The third and last step will be the installation of soil moisture sensors. They will be balanced with calculated ETo/ETc values to prevent unnecessary irrigation events.		
G and G Farms	This proposed project covers 53 acres of a 128 acre operation of mature pecans. This portion of our operation has been identified as the most inefficient part of our irrigation system by the Natural Resources Conservation District of Tehama County (NRCS) thru an irrigation system evaluation. Recommended changes will be made to the current irrigation system as recommended by NRCS and incorporate irrigation management practices. Soil moisture monitoring stations will be added to monitor irrigation effectiveness and efficiency, integrated weather station to track ET data, and a flow meter to monitor the efficiency of the current 200 HP pump with VFD. These added systems will track all data thru a telemetry system and allow for live online evaluation of irrigation efficiency. A solar array is planned to be added to offset electricity use.	$100,000.00	Tehama
Harry Berberian & Sons	The proposed project will convert 60 acres of almonds on flood irrigation to drip irrigation with a new pump, reservoir, drip lines and moisture sensors. The installation of drip emitters will increase the uptake of water to the trees while reducing weed seed germination requiring the spraying of herbicides throughout the season. Moisture sensors will be installed that will be used to calibrate the irrigation scheduling to plant performance based upon moisture rates in the soil. The installation of a new pump and reservoir will improve energy efficiency while allow for off peak pumping reducing demand on the grid. That in combination with the drip installation & sensors will dramatically reduce the operations greenhouse gases over the lifespan of the orchard.	$99,964.92	Kings
Michael Ferrero Vineyards	This project aims to save ground water and energy by connecting the existing deep water well drip irrigation system to the local North San Joaquin Irrigation Systems,	$100,000.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
	surface water pipeline. Also, installing a Solar Photo Voltaic system is planned to offset the energy consumed.		
Thaden Vick	The proposed project is for the automation and conversion of impact sprinklers on 75 acres of existing almonds. The project will convert the irrigation to low flow drip irrigation while installing moisture sensors weather station and cellular communication for off site management through a smart phone of computer. The implementation of smart technology in agriculture will make the project a leading example within the community as an example of a low water use agricultural operation.	$73,885.07	Fresno
Vineyard Wildlife Ranch, LLC	The purpose of this project is to install a 28.9 kW solar PV system to power the existing 15 hp electric submersible pump and a 15 hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather and soil moisture sensors, and volumetric management with the proposed digital flow meter will also be implemented on the 100 acres of alfalfa and hay served by this pump to increase water savings. This project site is in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$98,237.25	Monterey
Jeret Rogers	This project proposes to improve, modernize, and make the agriculture operation more efficient and effective. The agriculture operation will have 3 different pumps (2 booster pumps at 3hp each and 1 well pump at 2hp.) which will be connected to the solar array. The property has already been converted to low flow, low PSI, and pressure compensating drip irrigation. The plan is to expand the irrigation efficacy by increasing ability to hold and store water via the use of water storage tanks, to reduce water pump energy usage by installing high efficacy pumps with VFD units, to install a water meter to measure water used, and to conduct precision irrigation events using soil moisture monitors.	$99,250.95	San Diego
Fat Dragon Farms	This proposed project includes: (1) installation of a solar system, which will help reduce energy requirements to operate the pump and irrigation systems; (2) a weather monitoring station that tracks mildew calculations enabling the farm to reduce the amount of spraying in the vineyard thus reducing tractor usage and	$100,000.00	Sonoma

Applicant Organization	Project Description	Funds Requested	County
	GHG's, and evaporation on the vineyard enabling better water management in the vineyard; (3) a soil monitoring station that will better manage soil moisture content, thus increasing irrigation efficiency; (4) a flow meter will also be installed, which will help account for the amount of water used in every irrigation; and (5) a water tank to pull water during off [peak energy] hours and store it for delivery during peak energy hours. Furthermore, recipient will complete an irrigation training course, aim to replant sections of vineyard with root stocks that require less water consumption (where applicable), and implement cover cropping and mulch during the project term.		
James Efrid	The proposed project is a drip to flood conversion on approximately 77 acres of almond trees along with a new 50 HP booster pump, soil moisture sensors and a 173-kW solar system. The current energy use is electric and that will be converted so a significant portion of the energy used from the project will come from the proposed solar system.	$99,089.30	Fresno
Mooney Makers	This project allows for the installation of two soil moisture monitoring units across 50 acres of almonds to track the movement and plant uptake of irrigation water to ensure that a minimum amount of water is used while maximizing yield. The existing 60hp well pump will be used to supply 100% groundwater, and the flow meter will connect to telemetry to monitor and record water applied.	$11,085.86	Tulare
Almond Joy Inc	This project allows for the installation of soil moisture monitoring units across 2 ranches totaling 158 acres of almonds to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. Almond Joy North will use the existing 100 hp electric motor and Almond Joy South will use its existing 100 hp electric motor to supply 100% groundwater. The existing flow meters will connect to telemetry to monitor and record water applied.	$22,171.72	Tulare
Bergman Farms	This project allows for the installation of soil moisture monitoring units across 30 acres of almonds and 17 acres of cherries to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. Two existing well pumps, one 40 hp and one 50 hp, will be used	$27,766.96	Tulare

Applicant Organization	Project Description	Funds Requested	County
	to supply 100% groundwater, and flow meters will be installed to monitor, and record water applied.		
THOMAS CHANDLER	The project is requesting a grant for the conversion of an 18-acre farm from furrow to drip irrigation system, install a digital flow meter, install a soil moisture probe, irrigation line pressure sensor, pump timer controller, and a 20.4 kW solar system on an almond orchard. The project is on an 18-acre block that had been a furrow irrigated raisin vineyard in 2018 that is now a 18 acre furrow irrigated almond orchard. The pre-project had a 15 HP Ag well pump. The post project will have a 25 HP Ag well pump and 15 HP booster pump. The booster pump is required to pressurize the drip irrigation system.	$68,194.07	Fresno
John Boneso	This project proposes the implementation of a Tule Evapotranspiration plant monitoring system, the installation of pure sense soil monitors, the installation of a site-specific weather station. Through these implementations, Grape Plantation will be capable of reducing our water usage by monitoring the plants' moisture.	$25,631.00	San Luis Obispo
Borzini Farms Inc	The purpose of this project is to replace the existing 115 hp diesel driven booster pump with an electrically-driven equivalent. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather and soil moisture sensors, and volumetric management with the proposed flow meter and well level sensor will also be implemented on the 215 acres of row crops served by this pump to increase water savings. This project site is in the 3-004.04 Salinas Valley basin, which is not critically over-drafted as of January 2016.	$78,434.51	Monterey
Richland Hulling & Drying	The purpose of this project is to switch to solar and install moisture sensors to reduce greenhouse gas emissions and save irrigation water.	$99,939.85	Sutter
TKH, LLC dba Westwind Farms	The applicant currently irrigates 55 acres of cherries and 25 acres of grapevines using groundwater pumped from a well. The well draws groundwater from a critically over drafted subbasin. The project involves installation of facilities to enable the farmer to receive and use surface water from NSJWCD, instead of groundwater, to irrigate an existing orchard and vineyard: 1) one grower owned	$100,000.00	San Joaquin

Applicant Organization	Project Description	Funds Requested	County
	turnout on the District pipeline with meter 2) a two-way Remote Telemetry Unit (RTU) at the turnout , 3) IWM with Soil Moisture Sensors with Data Recorder, 4) the wet-well, booster pump, pipe, couplings, and valves needed to connect the turnout to the grower's existing irrigation systems, and 5) a new filter station and drip irrigation to replace existing flood irrigation.		
Neill Orchards Inc	This project proposes to include irrigation management practices on a 68-acre parcel. Soil moisture stations from Irrigate.net will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, pumps efficiency will be monitored by adding a flow meter to the discharge, and pressure sensors before and after the filters. This would be connected to a telemetry network as well. In addition, a solar array will be added to the pump to power it. The existing deep well irrigation system will be converted to a surface irrigation system. By accessing information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$100,000.00	Glenn
Richter AG Inc.	The purpose of this project is to improve the current irrigation system and expand cropping capabilities using an improved sub-surface drip system. The current drip irrigation system is inefficient for row crops and requires the use of a diesel engine to pump to both fields. The current 120 HP engine/pump requires us to fill up diesel regularly and consequently the RPM cannot be kept high enough on the 37.4 acre set to effectively filter the DPF system on the motor. In addition, remote field monitoring technology will be installed to improve water management in the farm. In addition, a new propane powered engine and improvements will be added to the existing pump to pressurize the system, and a functional flow meter will be added to measure water applied.	$63,056.38	Colusa
TreeSap Farms, LLC	This project proposes replacement of approximately 90 acres of old Rainbird 35A mostly with 3/16-inch nozzles to Netafim MegaNet 24D 450 low flow sprinklers with pressure regulating valves for better uniformity and less water usage. Low flow/Low pressure sprinklers require less energy to operate the system. Also, the existing degraded and offline filter station will be replaced with a sand media filter	$59,406.41	San Diego

Applicant Organization	Project Description	Funds Requested	County
	with pressure sustaining valve. The new filter station allows for use of low flow sprinklers. A flow meter will be installed.		
John and Carmen Berns	The project proposes to install soil moisture sensors, cloud-based data collection, a flow meter, weather station, and automatic shut off valves to increase water savings. To reduce greenhouse gas emission the project proposes to install a solar system to power well pumps.	$99,946.38	Riverside
SloMart Ranches	SloMart Ranches proposes to: (1) Install new fanjet irrigation system on 6.68 acres that will be planted as soon as irrigation system is installed, these 7 acres were old citrus trees that were pulled out and the irrigation system was drag line sprinkler in which we pulled those out as well. (2) Upgrade the current system on 21.90 acres which has producing navels and valencia trees. The irrigation system on this is an old drag line sprinkler system that is ineficient for the trees water needs. The new system would replace the current irrigation with a new efficient system. (3) Replace the current filter/pump system. This would allow the system to pump and filter water much more efficiently and not leak.	$45,325.99	Tulare
Adam P. Mettler	The proposed project is to install a new 10hp electric centrifugal booster pump to receive and use surface water from the North San Joaquin Water Conservation District pipeline, instead of groundwater, to irrigate the existing vineyard, which uses drip irrigation and water from a neighbor's 30hp electric deep well turbine pump. The proposed pump improvements include a concrete sump to accept the surface water, a 10hp centrifugal booster pump with a flow meter, a filter station, mainline pipe to tie into the existing drip system, and pump automation. Also, one Sentek soil moisture probe will be installed as well as a Davis Instruments weather station, which will assist in improved irrigation scheduling through real-time evaluation of environmental conditions using Wiseconn USA telemetry capabilities.	$48,541.10	San Joaquin
Ryan Colburn	The proposed project is to convert a formally flood irrigated walnut block to drip irrigated blueberries cultivated in pots for maximum control of water and nutrient application.	$99,998.96	Kings
Creekside Farms Inc.	The purpose of this project is to convert 12 acres of soil grown blackberry production into a substrate growing system capable of growing raspberries and	$99,738.41	Santa Cruz

Applicant Organization	Project Description	Funds Requested	County
	blackberries. The irrigation system is designed to operate at low pressure while using pressure compensating emitters. Drainage water from pots is collected and reclaimed for irrigation. Growing in the substrate media gives more control of fertility and water inputs allowing for a reduction in overall input use. Volumetric soil moisture probes are used to monitor substrate media and rain buckets are used to measure applied water and drainage water. Well water and drainage water volumes are measured with flow meters. Additionally, the purpose of this project is to install a 4.08 kW solar PV system to power the existing 20 hp electric vertical shaft turbine pump and a 40 hp electric booster pump. In addition, weather and soil moisture sensors, and volumetric management with the existing digital flow meter and well level sensor will also be implemented on the 12 acres of berries served by this pump to increase water savings. This project site is located in the 3-002.01 Pajaro Valley basin, which is critically over-drafted as of January 2016.		
Copper Cane LLC	The purpose of this project is to install weather stations and 12 field nodes to monitor soil moisture throughout our entire 220-acre vineyard to ensure that the necessary amount of water is used for the vineyard. This vineyard is in Sisquoc, CA, which is mostly planted to Pinot Noir for wine production. The reservoir is currently lined to save on water. In addition to the weather stations and soil sensors will be installed to aid in irrigation decision. Also, the propane burning engine will be changed to a more energy efficient electrical motor with VFD drive.	$99,698.70	Santa Barbara
Bengard Ranch, LLC	This project proposes implementation of unique solar shade structure near shop yard at the Hageman ranch in addition to implementation of soil sensor as a pilot program for the main agricultural operation.	$98,787.48	Monterey
United Berry Farms, LLC	The purpose of this project is to install a 13.3 kW solar PV system to power the existing 30 hp electric vertical shaft turbine pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, micro-drip irrigation will also be implemented on the 72.33 acres of strawberries served by this pump to increase water savings. This project site is in the Santa Clara River Valley, Oxnard basin, which is critically over-drafted as of January 2016.	$99,636.46	Ventura

Applicant Organization	Project Description	Funds Requested	County
HB Ag Investments	This project allows for the installation of a 202.5 kW DC solar system to power an existing 250 hp pump. The pump is currently powered by natural gas but will be tied in to the new solar power system. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield, and a weather station will be installed to utilize ET based scheduling.	$100,000.00	Kern
RBG Farming	This project allows for the installation of two solar units, each 142.56 kW DC, to power pumps on 265 acres of almonds. The existing 250 hp pump and 150 hp pump are both electric and pump ground water. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield, and a weather station will be installed to utilize ET based scheduling.	$100,000.00	Kern
Sohan Samran and Mandeep Samran Trust	This project plans to replace/retrofit a low pump efficiency 200HP that has not been used because of its high cost of operation; a VFD will be installed on this pump as well. In addition, a real time IWM-3 irrigation monitoring solution including irrigation scheduling software will be installed which will help reduce water usage for irrigation and reduce greenhouse gas (GHG) emissions through reduced pumping. The Weather/ET, soil moisture, Leaf wetness health/ soil temperature kits and pressure sensors installed will be used to determine the appropriate interval between and duration of irrigation events considering the wide range of soils on this ranch. The sensor network will also alert to irrigation faults or broken drip lines reducing wasted water. The current property has two flow meters with PC interface and the plan is to also install 2 flow meters with PC interface to monitor the water used on each well.	$99,897.22	Madera
Jensen Brothers - Kirk Jensen	This purpose of this project is to use the PMS pressure bomb and in soil sensors, which will enable accurate measurement of soil moisture as well as crop stress level. This information would allow to more accurately execute deficit irrigation during periods of drought, safely reduce irrigation during times such as hull split where over irrigation can lead to disease problems, eliminate the risk of over irrigating and pushing fertilizer or other materials down and out of the soil profile, and overall water use reduction. By achieving these four goals, this project would	$13,000.00	Stanislaus and Merced

Applicant Organization	Project Description	Funds Requested	County
	greatly benefit the operation and local community by increasing the health and safety of local groundwater basin and supply of surface water. Currently, scheduling irrigation is based on auguring the soil profile and estimating soil moisture by hand as well as using visual stress indicators from the trees to determine if the amount of irrigation hours is efficient.		
Baughman Properties	This project allows for the installation of an 18.48 kW DC solar system to power an existing 100 hp pump on 32 acres of almonds. The pump is currently electric but will be tied in to the new solar power system. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. In addition, a weather station will be installed to utilize ET based scheduling.	$86,557.87	Kern
Arbor Vineyards	The proposed project for Vineyard 1 is to convert the 38 acres of flood irrigation to drip irrigation with a new 15hp variable frequency drive well pump and flow meter. The proposed project for Vineyard 2 is to convert the 40 acres of drip irrigation to use surface water instead of groundwater and install a new 15hp centrifugal pump with a flow meter, filter station, and VFD. Vineyard 2 improvements include installing mainline pipe to tie into the existing drip system. Also, pump automations will be added to both vineyards, a total of three Sentek soil moisture probes, and one Davis Instruments weather station. The proposed changes to the existing on-farm irrigation system will save energy and water for Vineyard 1 through conversion from flood to drip irrigation and upgrading to a more efficient VFD pump. The proposed changes for Vineyard 1 and Vineyard 2 will result in additional water savings by providing tools and information to better manage the total volume of water applied to the crops.	$99,909.05	San Joaquin
Peterson Freed Farms, LLC	This project allows for the installation of a 13.8 kW DC solar system to power an existing 25 hp pump on 30 acres of blueberries. The pump is currently electric and will be tied in to the new solar power system. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure minimum use of water while maximizing yield, and a weather station will be installed to utilize ET based scheduling. Pump control technology will also be used	$89,990.26	Tulare

Applicant Organization	Project Description	Funds Requested	County
	for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints.		
Sherfield Ranches	This project allows for the conversion from flood to fan jets on 38 acres of citrus. The system will include new filters and a flow meter while utilizing the 25 hp electric pump that is already in place. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure minimum use of water while maximizing yield, and a weather station will be installed to utilize ET based irrigation scheduling. A solution machine will also be used to amend water and soil chemistry to reduce nonbeneficial water loss. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints.	$100,000.00	Tulare
Bills Et.Al.	This proposed project will install a solid-set sprinkler system (regular or micro) with weather station and soil moisture monitoring and automated control to improve both irrigation efficiency and olive production. The only water source currently is a well with a 3 hp, 55 gpm capacity, constant pressure (~ 50 psi) 3 phase pump. The pump was installed June 27, 2007. The well has a TD of about 80 ft with an average SWL of about 30 ft. The pump intakes are located at 75 ft. Pumping WL ranged from 50 to 65 ft depending on conditions. Power source is electric (KWH) provided by PG&E. Olives and fruit trees are currently watered using above ground movable sprinklers on an irregular schedule that are labor intensive and waste water.	$12,165.00	Glenn
The Terrace Foundation	This project proposes to add a solar installation, which will permit lowering of fossil fuel consumption, thus reducing GHG. Replacing the current sprinkler system with subsurface drip irrigation will lower water consumption and enable an expansion of the vegetable garden and orchard. In addition, the installation of two flow meters is proposed; one to measure City water and the other recycled water. The Farm is currently not segregated in its electric and water billing from the rest of the parcel. The Farm engages in composting and mulching. The proposed solar array will be a 5W system, however, to promote to an ideal 12W system, the	$93,714.50	Santa Barbara

Applicant Organization	Project Description	Funds Requested	County
	applicant will negotiate for cost share. In addition, the Farmworkers will attend irrigation training.		
Edward W. Boeger Exemption Trust	The project includes installation of a 12.18 kW DC solar system, which will help reduce the annual 19,148 kWh usage of the energy requirements for irrigation for 80 acres of Walnuts. 33 Acres of Walnuts with above ground, surface irrigation, will be converted to underground solid-state system to reduce labor, fuel and equipment costs of irrigation. A Variable Frequency Drive will be installed on a 40 HP pump at own cost. Also, soil moisture sensors will be installed to better manage soil moisture content, thus increasing irrigation efficiency. A flow meter will also be installed at own cost, which will help account for water used in every irrigation. The combination of these four installations will help the agricultural operation become more sustainable and reduce water usage and improve water use efficiency.	$93,346.02	Butte
Ikeda Bros	The purpose of this project is to install a 30.6 kW solar PV system to power the existing 30 hp electric submersible pump and 40 hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather and soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 102 acres of row crops served by this pump to increase water savings. This project site is in the 3-012 Santa Maria Valley basin, which is not critically over-drafted as of January 2016.	$99,999.01	San Luis Obispo
LOLA Sonoma Farms	This project proposes to complete 3 sub-projects. First, it proposes to convert one ground water well ("South Well" 480 feet depth) to a variable frequency drive pump to achieve 2 objectives: reduce power consumption by driving the pump based on varying demand and enable drip irrigation throughout vegetable crops by driving the pump at a lower flow rate over a longer period of time to reduce or eliminate sand and sediment drawn from the well. Second, a second well ("North Well" 500 feet depth) would be converted from a gasoline generator to an existing PV Solar Array and grid tie electrical power. Third, flow meters and soil moisture	$55,488.18	California

Applicant Organization	Project Description	Funds Requested	County
	sensors would be integrated with an existing weather station and WiFi network to enable water management and scheduling.		
Joan Avedian	The proposed project adds a drip system, new pressure pump, solar PV array, and IWM Level 3 management (flow meter, 2 soil moisture stations, and advanced volumetric management). Current situation is a flood irrigated, 38.1-acre vineyard. All irrigation water is pumped from the ground with a 30hp well pump. There is no flow meter or soil moisture monitoring.	$99,989.20	Fresno
Jones Farms	This project will upgrade Level "0" IWM practices to Level "3". The current pump will be retrofitted to improve overall pumping efficiency, which will also produce additional GHG savings. The new plantings will significantly increase the yields per acre (crop per drop). Groundwater pumping will be reduced. Jobs and revenue will be additional benefits to a severely disadvantaged community. Inefficient flood irrigated 17-acre vineyard are upgraded to a high yielding, drip irrigated vineyard.	$86,835.86	Fresno
Tiwana Farms	The proposed project will improve water savings and reduce greenhouse gas emissions in wine grapes. Current irrigation uses a 150 HP electric turbine pump. The plan is to use plant, soil, and weather-based methods for irrigation scheduling. A drip irrigation system will be modified to adjust to the changing needs. Also, solar panels and a Variable Frequency Drive Pump will be installed. Pumps will be retrofitted, and low-pressure micro-irrigation system will be used.	$100,000.00	San Joaquin
Marie's Orchard	This project will improve water usage efficiency on 10 acres of almonds. Soil moisture sensors will be used alongside a weather station to correctly schedule irrigations. The orchard will be converted from flood irrigation to inline drip. The pump and motor will be replaced with a new high efficiency submersible pump. Solar panels will be installed to offset the power consumed by the motor.	$81,364.51	Fresno

Applicant Organization	Project Description	Funds Requested	County
Legacy Family Farms LLC	This project allows for the installation of soil moisture monitoring equipment, a VFD, and pump control on 17 acres of citrus. The citrus fan jet system will be retrofitted to a double line drip system and irrigated by a 7.5 hp electric pump. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that minimum water is used while maximizing yield, and a weather station will be installed to utilize ET based scheduling. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints. A solution machine will also be used to amend water and soil chemistry to reduce nonbeneficial water loss.	$82,158.98	Fresno
Jim Jenner	This project proposes to install a 5 HP surface water pump to pressurize the existing drip irrigation system from the North San Joaquin Water Conservation District's South Pipeline to offset our groundwater use. The project also includes replacing an existing inefficient submersible 15 HP electric motor and pump with a highly efficient 10 HP submersible motor and pump at existing well which is currently the sole source of water. A VFD will be added to the new pump/motor. A grid-tied 3.6kW solar (PV) system will be added at the pump main service to offset all electrical usage by the new pump and irrigation electronics. Also, soil moisture sensors, a weather data collector and digital water meters will be added.	$85,885.47	San Joaquin
PureFresh Farms	This project will include the installation of state-of-the-art water and energy technology to promote efficiency and reduce the carbon footprint of the 38.9-acre orchard's for years to come. PureFresh Farms is installing energy and water efficiency technology which will include: a weather station with three moisture sensors with telemetry, a high efficiency 25hp pump with variable frequency drive (VFD) control modules, and a 27,200 kW DC solar array that will power the orchard's pumping and irrigation systems. The project's goal is to utilize water and energy resources in the most efficient way possible to promote economic and	$100,000.00	Fresno

Applicant Organization	Project Description	Funds Requested	County
	environmental sustainability for PureFresh Farms while reducing the orchard's carbon footprint.		
Davis Vineyards	This project proposes to install a 244.11kW solar system and water recharge basin in order to decrease the GHG emissions and water usage of Davis Vineyards. The energy delivered to the 7 meters on the 290-acre agricultural operation would be produced by the renewable energy generation project. This project will increase groundwater sustainability by actively recharging and by reducing the pumping of groundwater for irrigation and shifting to the use of surface water with much lower energy inputs, adding additional benefits of GHG reductions. Soil monitoring stations and weather monitoring stations will also be included.	$100,000.00	Madera
Jackrabbit Ranch	This project proposes to replace 7.9 and 5.5HP gas-powered pumps with a set of solar powered pumps and solar power set-up sufficient to lift irrigation water. The static water tanks will be switched out to a 51,863-gallon rainwater harvesting tank (less pumping, less water taken from groundwater.) Instead of impact water guns, the rainwater harvesting tank with solar-power booster pump (powered by the solar power system) will feed fields of sub-surface micro drip irrigation lines to better irrigate the 8+ acres of orchardgrass that are raised beeves on for sale as food. Further, the rainwater harvesting tank with solar-pumped water will source a ~quarter-acre herb (rosemary, oregano, lavender, other insecticidal) garden switching to drip from hand-watered, with rain sensors on an automated system run on DC to save even more water.	$99,999.04	Mendocino
Cook's Flat Associates dba Smith-Madrone	This proposed project consists of two part: Part one is to install a radio operated sensor that will tell a pump one-third mile distant and 700 feet lower when to turn on water pump and when to turn it off based on demand use. Currently, the pump is manually turned on or off only after traveling 3/4 mile to get to the pump. During the irrigation season it is on 24/7. Part two is to install a liner in our leaking 4.5-acre reservoir. With a workable reservoir we can capture and use winter collected rain water instead of spring-feed ground water. The project in will result in water savings by displacing summer spring feed water, with impounded winter	$60,071.92	Napa County

Applicant Organization	Project Description	Funds Requested	County
	rain & runoff water. There will be a similar savings in power usage, but not as large.		
Kuljeet Mundi	This project proposes to include irrigation management practices on a 63-acre parcel. Also, soil moisture sensor stations will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, pumps efficiency will be monitored by adding a flow meter to the discharges, and pressure sensors before and after the filters. This would be connected to a telemetry network as well. In addition, a VFD will be added to the 30HP pump and a solar array to the pump to power it. By accessing this information, along with ET data from a proposed ETo Station, water use and GHG Emissions can be reduced by irrigating more effectively.	$94,644.11	Sutter
William Pruitt	The proposed project includes: (1) installation of a 35.8 AC rated solar system (2) installation of a 50 HP variable frequency drive electric panel to reduce the irrigation system operating pressure and electrical usage, (3) installation of a new 50 HP premium efficient US motor on an existing turbine irrigation booster pump, (4) installation of 3 Sentek soil moisture probes with remote access to help schedule irrigations, 3 inline pressure sensors with remote access to verify irrigation events occurred at the correct time and duration, 1 Puresense field weather station with remote access to determine field weather conditions, and a Seametrics magnetic flowmeter to record the amount of water applied to the field. The project also includes the installation of an electrical timer that will be used to automatically turn off the irrigation booster pump and fertilizer pump after an irrigation event has occurred for a selected amount of time.	$100,000.00	Merced
Marilyn Vierra	This project proposes to take advantage of Hortau irrigation management, scheduling and custom automation to increase efficiencies and reduce water, energy, nutrient and pesticide usage. Also, with the correct irrigation scheduling and automation the runoff and erosion problems can be mitigated. In addition, a new, accurate seametrics flowmeter will be added. In addition, irrigation valves will be upgraded as part of matching funds. The ranch is in Riverdale, CA. a	$100,000.00	Fresno

Applicant Organization	Project Description	Funds Requested	County
	disadvantaged community. Currently ET is being used to guess the irrigation scheduling which is not very efficient.		
Pisoni Farms	This project will upgrade the current well by installing a variable frequency drive pumping plant. The upgrades will eliminate the need to use a diesel booster pump. This will result in farm energy savings and improvements in air quality. The project will also convert 44 acres of farmland, currently irrigated by sprinklers, to drip irrigation with the goal of reducing water and energy usage and having more efficient and targeted irrigation sets.	$100,000.00	Monterey
Leavens Ranches LLC	This project plans to convert approx. 27 acres of lemons on original micro sprayers, on sandy loam soils, to twin Line drip tubing. Pressure regulators and compensating emitters will be added to improve distribution uniformity. A VFD/pump combination and self-flushing filter will be installed, replacing the constant state booster, allowing smaller more frequent sets to be run. Pump operation can also be optimized to periods when use of existing solar power is maximized. A timer on the pump will allow to optimize the set time for the 27 acres on Tubing, and 4.5 acres on the standard and more precise combinations of set times to be selected. A self-flushing screen filter will be supplied on the booster feed line reducing friction losses on the booster supply. Automatic control valves will be installed on the two standards, and each will be individually telemetry or timer controlled. Two Flowmeters will be installed near the flowmeters on each system. Remote monitoring equipment with field sensors will be installed at three depths, along with pressure sensors to monitor set duration. Also, the irrigation monitoring will be extended to nearby sections of Lemons and Avocado on the standard microsprayer systems.	$62,348.77	Ventura
Kencarol Inc	This project allows for the installation of soil moisture monitoring units and weather stations across 199 acres of citrus to track the movement and plant uptake of irrigation water to ensure minimum water use while maximizing yield. Four existing pumps, one at each ranch, will be used to supply 100% groundwater to the crop. The existing pumps are 5 hp, 15 hp, 20 hp, and 30 hp and they are all electric.	$69,202.44	Tulare

Applicant Organization	Project Description	Funds Requested	County
CitriCare	This project allows for the installation of soil moisture monitoring units and weather stations across 161 acres of citrus to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. Four existing pumps, one at each ranch, will be used to supply 100% groundwater to the crop. The existing pumps are 10 hp, 25 hp, 30 hp, and 30 hp and they are all electric.	$61,861.24	Tulare
Michael H Nielsen	This project allows for the installation of a weather station, pump control, new drip tubing, and a 22.4 kW solar system on 26 acres of citrus. The citrus is irrigated with fan jet by a 40 hp electric pump that will be hooked to the new solar. A weather station will be installed to utilize ET based scheduling. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints. New drip hose will be installed as the primary irrigation method to reduce water loss due to evaporation from the fan jets.	$100,000.00	Fresno
Chuck and Rebecca Brown	This project allows for the installation of soil moisture monitoring equipment, weather stations, and an acid machine on 23 acres of citrus and 75 acres of walnuts. The citrus is irrigated with fan jets by a 30 hp electric pump and the walnuts are irrigated with drip by a 75 hp electric pump. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water, and a weather station will be installed to utilize ET based scheduling. An acid machine will also be used to amend water and soil chemistry to reduce non-beneficial water loss.	$39,095.85	Tulare
Ty Muxlow Farms	This project proposes to install a new system to be able to monitor soil moisture through sensors with electronic data output and flow meters to ensure efficient irrigation scheduling. This will provide more accurate irrigation and have electronic records that will allow to review past irrigation and make any changes for the upcoming seasons. Along with CIMIS station usage, water use efficiency will be improved. Also, a solar system will be installed that will allow to reduce GHG Emissions created by water pumping needs.	$99,961.90	Tulare

Applicant Organization	Project Description	Funds Requested	County
Joseph P & Jeannette Petersen, Trustees	This proposed project will reduce groundwater and energy consumption used by the 42.4 acres of vineyard and 5.2 acres of cherries currently irrigated by a 30HP and 15HP deep well turbine (DWT) via drip and micro-sprinkler. The project will allow to tie into the NSJWCD pipeline to use surface water when available and not pump groundwater. It will also allow to install a solar system for the 30HP DWT. The water meters, CIMIS station, soil moisture probes, remote telemetry unit and updated and automated filters will further improve efficiencies in pumping and water usage. Other applied for components include; Grower owned turnout from the District pipeline to a pipeline that will serve a sump and 15HP short coupled VFD Pump, filter station, water meters, soil moisture probes and two-way remote telemetry unit (RTU) that will provide pressurized surface water to all 47.5 acres. To reach all existing blocks, a 6" pipeline will have to be installed to connect the new sump to the pipeline downstream of the existing deep well pump station located on parcel 62 (30HP deep well turbine). The RTU will integrate CIMIS station data into irrigation scheduling and remotely view real-time flow meter data. The use of surface water, new VFD pump and solar system will save power.	$99,997.08	San Joaquin
Buffalo Creek Ranches	The proposed project will allow Buffalo Creek Ranches (BCR) to have access to surface water for irrigation and ground water recharge, as well as offset electrical demand to save on GHG emissions, and move from calendar irrigation scheduling to ET based irrigation scheduling. To accomplish this, BCR will install a 40HP VFD pump and tie-in to the surface water supply, install an 18kw solar array, and attend irrigation training courses.	$99,629.24	Tulare
Triple E Livestock and Land Co	This project allows for the installation of soil moisture monitoring equipment, a silo and a solution machine on 115 acres of almonds spread over two ranches. The ranches are both drip irrigated, with 176 ranches being fed by a 110 hp diesel pump and Visalia ranch being fed by a 15 hp electric pump. Soil moisture monitoring units will track the movement and plant uptake of irrigation water, while a silo and solution machine will amend water and soil chemistry to reduce non-beneficial water loss.	$100,000.00	Tulare

Applicant Organization	Project Description	Funds Requested	County
Sam and Suzanne Etchegaray	This project allows for the installation of soil moisture monitoring equipment, a silo and a solution machine on 233 acres of table grapes. The ranch is drip irrigated and serviced by two diesel pumps, one at 150 hp and one at 450 hp. Soil moisture monitoring units will track the movement and plant uptake of irrigation water, while two silos and solution machines will amend water and soil chemistry to reduce non-beneficial water loss.	$100,000.00	Tulare
Singh Farming Company	The purpose of this project is to install plant, soil, and weather monitoring sensors as well as flow monitoring. It will all be automated allowing to schedule irrigation events precisely when needed reducing pumping and unnecessary irrigation events. Valves will be added to go from 2 to 4 sets that will allow to schedule irrigation based on the different ET of grapes vs almonds, different water needs of young vs. older almonds and plant stress but also soil moisture percolation differences, which are large within each block. This ranch is a 154-acre almond orchard and grape vineyard irrigated by an electric 125 hp pump with a two set, drip irrigation system.	$72,055.90	Madera
Living Waters Dairy	This project proposes to convert a 37.2-acre flood irrigated walnut field to under tree sprinklers. A 15.6-acre flood irrigated corn field is replanted to almonds, with a dual line drip system. The pump is re-bowled to improve efficiency and generate the correct pressure and flow for the new systems. IWM components of flow meter and soil moisture monitoring are installed. Advanced, Level 3 IWM management will be practiced saving additional water and GHG's.	$99,994.98	Fresno
PureFarms	The purpose of this project is to include the installation of state-of-the-art water and energy technology in PureFarms to promote water efficiency and reduce their 19-acre orchard's carbon footprint for years to come. Also, a high-efficiency 25 hp pump with a variable frequency drive (VFD) control module will be installed in addition to a 13,440 Kw DC solar photo-voltaic (PV) system with 42 ground-mounted solar panels by Canadian Solar, which will fully power the orchard's operations. These state-of-the-art systems will be integrated with the orchard's existing high-efficiency irrigation system to optimize efficiency and minimize waste. The SWEEP Project's goal is to promote the economic and environmental	$66,000.00	Fresno

Applicant Organization	Project Description	Funds Requested	County
	sustainability across all agricultural practices at PureFarms while reducing the orchard's carbon footprint.		
Nichols Farms, Inc	The purpose of this project is to automate the irrigation system on 220 acres of bearing pistachios in Nichols Farms. The pumps, wells, and valves will be retrofitted with Hotspot Ag, Inc. hardware. All three wells will be retrofitted for remote start/stop, flow and energy logging, and pressure monitoring. One of the wells will be equipped with a standing and pumping water level sensor to calculate pumping efficiency. The reservoir lift pump will be equipped with remote start/stop equipment and the filter station will be equipped with top and bottom manifold pressure transducers and monitor flow. The 36 3" brass valves that were installed with the drip system in 2001 need to be retrofitted. In addition, the valves will be remotely monitored. Six Sentek drill and drop soil moisture sensors will be installed to monitor soil moisture. The downstream valve pressure transducers will be utilized to verify the ET forecast or irrigation plan was met. The soil moisture sensors will be utilized in the software to provide feedback to the ET irrigation plan. The combination of hardware retrofits and software will allow to optimize energy and water management by measuring the soil and plant continuum, which will ultimately help conserve water and energy.	$93,790.66	Tulare
Batth Ranch Inc.	The project proposes to convert the whole 140 high pressure to low water drip irrigation. This would reduce the overall amount of water needed to irrigate the vineyard. Since the current irrigation systems is entirely relying on ground water, this is a huge savings to already critically over-drafted ground water basin. It would also drastically cut the amount of time and electricity required to irrigate the vineyard and allow to utilize off peak hours to irrigate.	$100,000.00	San Joaquin
M C Fagundes Ranch	This project aims to dramatically reduce the ranch's energy consumption by replacing a 25+ year old energy inefficient electric motor with a high efficiency electric motor and VFD on the ranch's 160 acres of Pistachios. This project will also replace the pump with new high efficiency pump and parts. The new electric	$100,000.00	Tulare

Applicant Organization	Project Description	Funds Requested	County
	motor is designed to be more energy efficient than the old pump, while the VFD reduces power consumption which saves energy and allows the drip irrigation system to run at peak efficiency. In addition, the project will reduce water consumption by installing a "Weather Station" to verify the local weather when scheduling irrigation to avoid unnecessary applications. The entire 160 acres are already drip-irrigated, and flow meters are installed throughout the ranch's irrigation system. This ensures the proper amount of water is applied and can be monitored throughout the season.		
Nancy Carlisle	The purpose of this project is to reduce on-farm water use and reduce greenhouse gas (GHG) emissions from irrigation and water pumping systems. This project proposes to: (1) Capture and use of surface and storm water run-off water in spring box system (2) Decrease and control run-off; utilize storm water for irrigation purposes (3) Improve water storage (4) Solar-powered pumping station to reduce GHG emissions (5) Soil moisture sensors (6) Implementing NRCS Conservation Practice Standards (7) Variable Micro-irrigation & drip irrigation to manage water use for frequent application of small quantities of water to the plants (8) Improved irrigation scheduling leading to reduced pump operation times (9) Efficiently and uniformly apply irrigation water and maintain soil moisture for plant growth (10) Prevent contamination of ground and surface water by efficiently and uniformly applying chemicals (11) Solar energy use to power the irrigation system (12) Improvement of air quality and reduction in energy use.	$73,868.22	San Benito
Trimmer Farm Management	The proposed project includes two initiatives: Firstly, a 28.6ac flood irrigated almond orchard is replanted to citrus with micro-irrigation. Two new pumps (a 20hp turbine pump for surface water pressurization, and a 40hp pressurized well pump) deliver water to the system. Soil moisture monitoring, flow measurement, and IWM Level 3 management will occur. Secondly, 169kw of solar and IWM Level 3 management will be added to 439.9ac (this acreage includes the almond to citrus conversion listed above). IWM advancement involves steps of one or two levels depending on the individual field.	$99,999.08	Fresno

Applicant Organization	Project Description	Funds Requested	County
Somerset Gourmet Farm Renewable Energy Project	This project proposes to install a 14.4 Kw solar photovoltaic system to directly power farm operations as well as 4 electric VFD energy efficient submersible pumps and 1 electric VFD energy efficient pump to draw from the farm pond (storm-water recharged) for irrigation. A Smart platform will control, monitor, and balance the on-farm energy loads the goal of which will be to lower costs of electricity, as electric grid interconnection will be maintained. Using Smart water flow meters, soil moisture sensors, and a pressure chamber to monitor moisture in plant tissue, irrigation management efficiencies will be increased. In addition, the irrigation training course will be taken. A cover crop application program will be added to the farm.	$100,000.00	El Dorado
Leo Schulz	This project proposes to upgrade 23-acre almond orchard from flood irrigation to Drip/Frost sand media filtered irrigation system including 2 soil moisture sensor controlled up-link to either a VFD controlled 10 Hp ground pump (existing well) or a 10 Hp lift pump using Consolidated Irrigation District water. The project includes installing a solar panel system.	$100,000.00	Kings
JV Farms Organic, LLC	The proposed project will implement soil sensors with irrigation water management practices to reduce water consumption on the 463-acre ranch that annually farms 907.8 acres of Romain and leafy green produce. In 2018, 1,290.27 acre-feet of water were used. Clean energy will be produced onsite with the installation of a 48.8 KW, 3,000 sq foot solar power canopy. The system is unique because the solar panel roof will be constructed using the latest "bi-facial" all glass solar panels, which generate electricity on both sides of the module.	$100,000.00	Monterey
Tree Clams Inc.	This project will convert the current flood irrigation system on 41.71 acres of pistachios to computer-controlled drip irrigation to increase water use efficiency and reduce GHG outputs. The new system will add automation to control valves, pump and filter flushing. System control will use a temperature and humidity sensor to shut off irrigation programs during overcast or rainy weather. The project includes installation of a flow meter to monitor water use throughout season, documenting water and pump electricity savings, and solar powered soil	$76,624.22	Tulare

Applicant Organization	Project Description	Funds Requested	County
	moisture profile probes with cellular connection. All available collected data will be accessible in the cloud from the controller's web access.		
Materra LLC	The project proposes to install an electric pump station, with VFD, to operate a micro-sprayer irrigation system on a permanent lemon crop. Sprinklers will be used to apply water for salinity management occasionally. A flow meter will be installed at the pump station and the system will allow for automation and irrigation management based on data from the existing climate and soil sensors. Currently sprinkler system is operated by a diesel pump station. A weather station and soil sensors are installed at the farm.	$100,000.00	Imperial
C&G Farms Inc.	This project proposes to rebuild the irrigation & pumping systems on The Dughi Ranch. Aluminum sprinkler pipe will be replaced with Yellowmine Solid Set Pipe for the entire farmed acreage of 158 acres. Also, a VFD will be added to the main well pump for all 158 acres. The irrigation system quote and design are from U.S. IRRIGATION and the VFD quote is from Future Wave Energy.	$100,000.00	Monterey
MFC Imperial 1 LLC	The proposed project will implement an electric pump station, with VFD, to operate the micro irrigation system on date palms on Ranch E-6. Sprinklers will be used to apply water for salinity management occasionally. A flow meter will be installed at the pump station and the system will allow for automation and irrigation management based on data from the existing climate and soil sensors. Ranch E-6 are currently flood (salinity management) and micro irrigation for date palms. The drip irrigation system is operated by a diesel pump station. A weather station and soil sensors are installed at the farm.	$100,000.00	Imperial
Jerry D & Kay D Mettler, Trust	The project involves installation of the following on-farm components to enable the farmer to receive and use surface water from NSJWCD's pipeline instead of groundwater to irrigate an existing vineyard and orchard: (1) a grower-owned turnout on the District pipeline with meter, (2) a two-way Remote Telemetry Unit ("RTU") at each turnout, (3) IWM with Soil Moisture Sensors with Data Recorder, and (4) the pipe, wet-well sump, booster pump, couplings, and valves needed to connect the turnout to the grower's existing irrigation system, (5) Solar Panels to offset greenhouse emissions connected to existing power grid. The proposed	$100,000.00	San Joaquin

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	changes to the existing on farm irrigation system will save power because the surface water is being pumped from the river, as opposed to underground, using the district new high-efficiency pump, and will only need minor boosting of pressure on farm. The proposed changes will result in water savings by providing growers with the tools and information to better manage the total volume of water that is applied to their crops.		
John Podesta Farms	This project will replace two 50-Hp deep-well electric turbine pumping plants providing 113 acres of walnuts with groundwater via a permanent underground sprinkler system. The existing system currently does not have a flow meter nor moisture-monitoring equipment. A new 50-Hp variable frequency drive (VFD) controlled high-efficiency short-shaft turbine pump will be installed on a surface water-supplied canal (Pixley Slough) approximately 3300 feet north of irrigated parcels. The VFD will optimize energy usage for each of the four unequal irrigation sets. The new system will have a flow meter located at irrigated parcel for easy monitoring and record keeping of actual water applied per irrigation. With the use of CIMIS data, the actual weekly crop ET requirements can be optimized.	$97,383.64	San Joaquin
Rockeye Insect and Weed Munitions Company	The proposed project is for an orchard of pistachios currently using drip irrigation on 61.2 acres in Kings County, Ca. The scope of work includes the conversion of flood irrigation system to a point source drip irrigation system, installation weather station and automation and a small solar system. The project will reduce energy and water use in an area with decreasing groundwater levels and unreliability in surface water deliveries. The project will promote water conservation and efficient irrigation management in the region and greater San Joaquin Valley.	$99,553.19	Kings
Alfredo Diaz	The project will upgrade existing irrigation infrastructure at an existing, 28-acre almond orchard the project proposes to upgrade an existing, antiquated and low efficiency 15-HP, electric drive groundwater pump with a new, 80%+ efficient pump system with a new flow meter. A proposed 14-kW solar array will provide electricity to the pump. Water from the pump will be delivered along existing pipelines to updated, higher efficiency Nelson R10 sprinklers, which will replace existing and malfunctioning Rainbird metal impact sprinklers currently in use on site. Also, new soil moisture and temperature measurements systems will be	$87,296.66	Glenn

Applicant Organization	Project Description	Funds Requested	County
	installed, which will help to greatly improve plant water stress estimates and, in combination with a proposed on-site weather station, will enable accurate and precise irrigation scheduling. The onsite weather station will help reduce and automate water application used to protect the trees from freezing after pollination has occurred.		
Mountain Ranch Farms, LLC	The proposed project includes conversion of solid set sprinklers to inline drip along with the installation of sensors and automation on 160.88 acres near Bakersfield, Ca. The project will significantly reduce the amount of water used and greenhouse gases emitted through an improvement in irrigation efficiency and online irrigation management.	$99,918.00	Kern
Gurtaj & Sukhraj Samran	The proposed project will fix one well pump with low pump efficiency. Also, a real time IWM-3 irrigation monitoring solution including irrigation scheduling software will be installed, which will help reduce water usage for irrigation and reduce greenhouse gas (GHG) emissions through reduced pumping. The Weather/ET, soil moisture, Leaf wetness health/ soil temp kits and pressure sensors installed will be used to determine the appropriate interval between and duration of irrigation events considering the wide range of soils on this ranch. The sensor network will also alert to irrigation faults or broken drip lines reducing wasted water. Also, 2 flow meters will be installed with PC interface to monitor the water used. These cost-effective technologies will help take better decisions about how to reduce irrigation while keeping yields. This project is reliant upon groundwater in the critically over-drafted Madera Basin.	$99,510.00	Madera
NK Development	This project proposes to automate the irrigation system on 934 acres of bearing pistachios in Coalinga. The pumps, wells, and valves will be retrofitted with Hotspot Ag, Inc. hardware. All seven pumps will be equipped with Hotspot Ag, Inc. equipment for remote start/stop, flow and energy logging, and pressure monitoring in advance of the field gate vales. The 24 3" manually actuated gate and brass valves will be retrofitted to hydraulically activated valves. In addition, the valves will be remotely monitored with a downstream pressure transducer. 12 Sentek drill and drop soil moisture sensors will be installed to monitor soil moisture. The downstream valve pressure transducers will be utilized to verify the	$99,930.76	Monterey

Applicant Organization	Project Description	Funds Requested	County
	ET forecast or irrigation plan was met. The soil moisture sensors will be utilized in the software to provide feedback to the ET irrigation plan. The combination of hardware retrofits and software will allow to optimize energy and water management by measuring the soil and plant continuum. This will ultimately help conserve water and energy.		
Ellsworth Farms, LLC	The proposed project is a flood to drip conversion on approximately 19 acres of pistachios and 1.5 acres of walnuts. A solar system, moisture sensors and valve automation will also be a part of this project which will reduce the site greenhouse gas emissions and water use through the application of renewable technology and remote irrigation management.	$99,370.19	Kern
Naimi Ranch inc	The proposed project is planning to upgrade current irrigation system and add a new pump with replacing out trees. Also, solar panels will be installed to power up the pumps.	$100,000.00	Merced
Grant Garcia Farms	This project proposes to install a new system to be able to monitor soil moisture through sensors with electronic data output and flow meters to ensure efficient irrigation scheduling. This will provide more accurate irrigation as well as maintaining electronic records that will allow to review past irrigation and make any changes for the upcoming seasons. These will be the first units that will be installed with future expansions including all planted acres. Also, a solar system will be installed, which will allow to reduce Green House Emissions created by water pumping needs.	$99,997.34	Fresno
GSA Farms, Inc.	This project proposes to improve water use efficiency and to improve GHG emissions footprint. Thus, this project plans to: (1) Install a 40 kW DC solar array, including 134 modules of 300-watt panels along with 134 Chilicon Power CP 250/285 micro-inverters, roof-mounted onto an existing agricultural building (2) Install a 480 V VFD onto the existing 60-HP pump to allow pump operation at slower flow rates (3) Purchase a Model 615 Pressure Chamber, used to directly measure the water demand of trees in GSA Farms' almond orchards. These project elements will enable GSA farms to reduce its total GHG emissions.	$100,000.00	Glenn

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Sherwood Equipment Inc.	The purpose of this project is to convert from Flood to micro-irrigation system. Also, an intelligent irrigation controller will be used that includes: soil moisture probes and a weather station to schedule irrigation; pressure sensors to monitor the efficiency of the filter station and flow meter to track water usage. In addition, the pumping plant will be converted from diesel to electric. Solar panels will be installed to offset the electricity use and incorporate a VFD so that the system is used as efficiently as possible.	$100,000.00	Fresno
Doug Les Farms	The proposed project will install a drip system, weather station, and moisture sensors on 147 acres of almonds.	$99,617.38	Tulare
Oskam Farms Inc	This project allows for the conversion of 80 acres of stone fruit from flood to drip by installing a new basin, filter station, and drip irrigation system. Adding the basin will allow to utilize more surface water and reduce the use of well pumps. A 50 hp electric pump and a 75 hp electric pump will deliver water, and a flow meter will be installed to record water use. A soil moisture monitoring unit will be installed to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield.	$100,000.00	Tulare
Stueve's Certified Organic Dairy	This project proposes to bring 3 phase power from Surprise Electric 17 miles to Dodge Ranch. Also, 2000 hp worth of Diesel motors will be removed and replaced with premium efficiency electric turbine motors to save diesel fuel costs and eliminate dependency on fossil fuels. In addition, VFD's will be installed on electric turbines and high efficiency type water heads on pivots vs spray heads to save more water from evaporation.	$99,250.00	Lassen
ABE Farms LLC	The proposed project will include an electric pump station, with VFD, to operate the micro irrigation system on date palms. Sprinklers will be used to apply water for salinity management occasionally. A flow meter will be installed at the pump station and the system will allow for automation and irrigation management based on data from the existing climate and soil sensors. Ranch Q10/Q12 are currently flood (salinity management) and micro irrigation for date palms. The drip irrigation system is operated by a diesel pump station. A weather station and soil sensors are installed at the farm.	$100,000.00	Imperial

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Sun World International, LLC	Installation of Hortau advance irrigation management systems, weather & flowmeter monitoring to increase our water use efficiencies and reduce total water usage. Also, to install a sulfur burner to improve the water health, and increase soil water infiltration to eliminate runoff and erosion	$100,000.00	Tulare
Trent Jackson Farms	The project proposes to install real time remote field monitoring sensors, flow meters, and a solar system, which will help irrigate more efficiently and reduce GHG emissions. The sensors installed will be reading soil moisture from 6" to 40". The sensors will also read fertilizer applications, and soil temperature at various depths. Soil moisture sensors will be used to determine the appropriate interval between irrigation, depth of wetting, and depth of extraction by roots and adequacy of wetting. Flow meters will also aid to improve water use efficiency by allowing to quantify the water used per irrigation events. The new solar system will allow to reduce GHG emissions.	$99,929.15	Tulare
TSV Reco, LLC	The purpose of this project is to replace approximately 97 acres of old Rainbird 35A mostly with 3/16-inch nozzles to Netafim MegaNet 24D 450 low flow sprinklers with pressure regulating valves for better uniformity and less water usage. Low flow/Low pressure sprinklers require less energy to operate the system. Existing degraded and offline filter station will be replaced with a sand media filter with pressure sustaining valve. The new filter station allows for use of low flow sprinklers. A flow meter will be installed.	$60,906.41	Riverside
Reiter Brothers, Inc.	The purpose of this project is to install a micro drip irrigation system on the 100 acres of soil-grown strawberries. The replacement of sprinklers with microsprinklers during strawberry plant establishment improves water savings, which is important given the Rose Ranch is in the critically over-drafted Fox Canyon Management Area. In addition, microsprinklers help reduce nitrogen movement off field. The Rose Ranch is in an area of high groundwater recharge, making thoughtful nitrogen management particularly important to ensure the preservation of safe drinking water for the region. In addition, the project scope includes a 50 hp Variable Frequency Drive (VFD) to power the existing 50 hp electric pump. This will reduce the amount of GHG emissions associated with the	$99,991.00	Ventura

Applicant Organization	Project Description	Funds Requested	County
	energy required for pumping. This project site is in a critically over-drafted basin as of January 2016. The VFD will remain in operation for at least 10 years, and the micro sprinklers are able to be used for 10 years, resulting in a cumulative water savings over the ranch and useful life of 300 AF.		
Kandarian Organic Farms	This project proposes to replace the current pumps with solar powered photo-voltaic pumps to save energy and reduce GHG emissions.	$2,979.00	San Luis Obispo
Santokh S. Toor and Arpinder K. Toor 2011 Living Trust	This proposed project will install FarmX IWM-3 soil sensors, plant sensors, Weather station with ET and use the sensor data for scheduling irrigation. Also, flow meters will be installed in addition to VFD's on well pumps to save pumping energy. To precisely schedule, FarmX field and flow monitoring systems will be utilized, which will allow to closely monitor real time water usage on the phones and computers. It will all be automated allowing to schedule irrigation events precisely when needed, which reduces pumping and unnecessary irrigation events. It will also mitigate nitrate leaching and loss. Lastly, FarmX's NDWI and NDVI images will be used to determine areas of the field that are over watered.	$99,908.42	Madera
Royal Oaks Farms, LLC	The purpose of this project is to retrofit existing pumps with variable frequency drives (VFD) to increase pumping efficiency and decrease greenhouse gases (GHG) in California. The pumps in this project are in the Pajaro Valley Basin (basin #3-02), which is critically over-drafted. Overall the project propositions can create a more sustainable and energy efficient California to preserve the family farm for future generations.	$21,319.25	Monterey
Rancho Royal Oaks, LLC	The purpose of this project is to retrofit existing pumps with variable frequency drives (VFD) to increase pumping efficiency and decrease greenhouse gases (GHG) in California. The pumps in this project are in the Pajaro Valley Basin (basin #3-02) which is critically over-drafted. Overall the project's propositions can create a	$46,648.13	Monterey

Applicant Organization	Project Description	Funds Requested	County
	more sustainable and energy efficient California to preserve family farm for future generations.		
NEIL DOUGHERTY	This project will convert 95 acres from furrow irrigation to sub surface drip irrigation for processing tomatoes. In addition, it will convert from diesel to propane and adding flow meter, soil moisture sensors, and ET monitoring system.	$67,965.87	Sutter
Becky Muxlow Farms	The purpose of this project is to install real time remote field monitoring sensors, flow meters, and a solar system, which will help irrigate more efficiently and reduce GHG emissions. The sensors installed will be reading soil moisture from 6" to 40". The sensors will read moisture levels, and soil temperature at various depths. Soil moisture sensors will be used to determine the appropriate interval between irrigation, depth of wetting, and depth of extraction by roots and adequacy of wetting. These remote field-monitoring units will include weather sensors to help irrigate based on ET and prevent unnecessary irrigation events. Soil temperature sensors will help fertilize appropriately at the best temperatures. Flow meters will also aid to improve water use efficiency by allowing to quantify the water used per irrigation events. The new solar system will allow to reduce GHG emissions. This project will help to improve water use efficiency while reducing GHG emissions.	$70,243.12	Tulare